

**ALTON COAL DEVELOPMENT
C/025/0005 INITIAL RESPONSE
TO TECHNICAL ANALYSIS**

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Refer to Record No. 0014 Date 06/15/2009

In C 025/0005/0006 Incoming

For additional information

COPY**Alton Coal Development, LLC**

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June 15, 2009

Daron Haddock, Permit Supervisor
 Utah Division of Oil, Gas and Mining
 1594 West North Temple, Suite 1210
 Salt Lake City, Utah 84114

Re: C/025/0005 – Initial Response to UDOGM Technical Analysis (Task ID #3100),
 received April 22, 2009

Dear Mr. Haddock,

Based on our review of the Technical Analysis (TA) for permit application C/025/0005 provided to Alton Coal Development, LLC (ACD) on April 22, 2009 by the Division, this initial response is provided to address issues separate from the technical response and modifications to the Mine and Reclamation Plan (MRP). This is not a complete response to the TA and a technical response, which will include modifications to the MRP, will be provided at a later date.

This review of the TA has been completed by the technical team of experts who have developed the MRP, in consultation with ACD attorneys. The technical team includes: Erik Petersen, P.G. (Petersen Hydrologic), Dr. Patrick Collins (Mt. Nebo Scientific), Robert E. Long, CPSS (Long Resource Consultants), Dr. Steven Petersen (Professor, BYU), and Chris McCourt, P.E (ACD). Concerns that have developed as a result of this review, which are addressed in this initial response include: inaccurate information, misapplication of data/reference material, requirements for permit approval that are outside the Division's regulatory authority, and requirements which provide minimal to no technical basis as justification.

In this initial response, each individual item of concern is bulleted and the Division's quote (as it appears in the TA) is provided in standard font followed by the ACD response which is in italic font. This information is separated into two sections: Deficiencies and Correction of Technical Analysis Statements. In addition to each response, there are also eight exhibits provided as either legal or technical sources to provide supporting information for the ACD responses. The enclosed document addresses each item (as described above) of concern resulting from the ACD review.

Sincerely,

Chris McCourt
 Chris McCourt, Manager

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APPLICATION FOR COAL PERMIT PROCESSING

COPYPermit Change ☐ New Permit ☒ Renewal ☐ Exploration ☐ Bond Release ☐ Transfer ☐Permittee: Alton Coal Development, LLCMine: Coal Hollow

Permit Number:

C/025/0005Title: Initial Response to Division Technical Analysis - Task ID #3100

Description, Include reason for application and timing required to implement:

This document is submitted as an initial response to the Division's Technical Analysis - Task ID #3100

Instructions: If you answer yes to any of the first eight questions, this application may require Public Notice publication.

- ☐ Yes ☒ No 1. Change in the size of the Permit Area? Acres: _____ Disturbed Area: _____ ☐ increase ☐ decrease.
- ☐ Yes ☒ No 2. Is the application submitted as a result of a Division Order? DO# _____
- ☐ Yes ☒ No 3. Does the application include operations outside a previously identified Cumulative Hydrologic Impact Area?
- ☐ Yes ☒ No 4. Does the application include operations in hydrologic basins other than as currently approved?
- ☐ Yes ☒ No 5. Does the application result from cancellation, reduction or increase of insurance or reclamation bond?
- ☐ Yes ☒ No 6. Does the application require or include public notice publication?
- ☒ Yes ☐ No 7. Does the application require or include ownership, control, right-of-entry, or compliance information?
- ☐ Yes ☒ No 8. Is proposed activity within 100 feet of a public road or cemetery or 300 feet of an occupied dwelling?
- ☐ Yes ☒ No 9. Is the application submitted as a result of a Violation? NOV # _____
- ☐ Yes ☒ No 10. Is the application submitted as a result of other laws or regulations or policies?

Explain: _____

- ☒ Yes ☐ No 11. Does the application affect the surface landowner or change the post mining land use?
- ☐ Yes ☒ No 12. Does the application require or include underground design or mine sequence and timing? (Modification of R2P2)
- ☒ Yes ☐ No 13. Does the application require or include collection and reporting of any baseline information?
- ☐ Yes ☒ No 14. Could the application have any effect on wildlife or vegetation outside the current disturbed area?
- ☒ Yes ☐ No 15. Does the application require or include soil removal, storage or placement?
- ☒ Yes ☐ No 16. Does the application require or include vegetation monitoring, removal or revegetation activities?
- ☒ Yes ☐ No 17. Does the application require or include construction, modification, or removal of surface facilities?
- ☒ Yes ☐ No 18. Does the application require or include water monitoring, sediment or drainage control measures?
- ☒ Yes ☐ No 19. Does the application require or include certified designs, maps or calculation?
- ☒ Yes ☐ No 20. Does the application require or include subsidence control or monitoring?
- ☐ Yes ☒ No 21. Have reclamation costs for bonding been provided?
- ☐ Yes ☒ No 22. Does the application involve a perennial stream, a stream buffer zone or discharges to a stream?
- ☒ Yes ☐ No 23. Does the application affect permits issued by other agencies or permits issued to other entities?
- ☒ Yes ☐ No 24. Does the application include confidential information and is it clearly marked and separated in the plan?

Please attach three (3) review copies of the application. If the mine is on or adjacent to Forest Service land please submit four (4) copies, thank you. (These numbers include a copy for the Price Field Office)

I hereby certify that I am a responsible official of the applicant and that the information contained in this application is true and correct to the best of my information and belief in all respects with the laws of Utah in reference to commitments, undertakings, and obligations, herein.

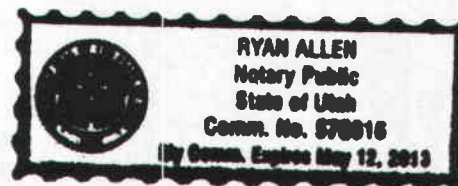
Chris McCourtManager6/15/09Chris McCourt

Print Name

Position

Date

Signature (Right-click above choose certify then have notary sign below)

Subscribed and sworn to before me this 15 day of June, 2009Notary Public: [Signature], state of Utah.My commission Expires: May 12, 2013Commission Number: 578816Address: 410 W. Main StCity: Cedar CityState: UTZip: 84720

For Office Use Only:

Assigned Tracking
Number:Received by [Signature]

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C/025/0005

Provide a detailed listing of all changes to the Mining and Reclamation Plan, which is required as a result of this proposed permit application. Individually list all maps and drawings that are added, replaced, or removed from the plan. Include changes to the table of contents, section of the plan, or other information as needed to specifically locate, identify and revise the existing Mining and Reclamation Plan. Include page, section and drawing number as part of the description.

DESCRIPTION OF MAP, TEXT, OR MATERIAL TO BE CHANGED

[illegible]

Any other specific or special instruction required for insertion of this proposal into the Mining and Reclamation Plan.

This document is provided as an initial response to the Technical Analysis. This response specifically addresses inaccuracies, misapplication of data/reference material, requirements for approval that are outside the Division's regulatory authority and requirements that provide minimal to no technical basis as justification. Therefore, there are no proposed changes to the Mine and Reclamation Plan based on the enclosed document.

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Deficiencies

Chapter 1

- **R645-301-121.200:** -The survey of subirrigated lands shown on Dwg. 7-7 should be extended to include all of Section 32.

The Division provides no justification for the requirement that the survey of subirrigated lands should be extended to include all of Section 32. More than three quarters of the land area in Section 32 consists of upland, mountainous terrain that is isolated from the hydrologic regime in Sink Valley. Additionally, more than three quarters of the land in Section 32 is outside the proposed Coal Hollow Mine permit and adjacent area. The Division either needs to delete this deficiency from the TA, or provide a valid scientific basis for this requirement.

Chapter 2

- **R645-301-234.230, Refer to Stabilization of Surface Areas Findings p. 156 of the TA:** Repeated from Task 2910. The application should clearly state the timetable for final grading of the excess spoil pile. Will final grading of the spoil pile be concurrent with construction of the pile, such that the 2.7 million cubic yards of spoil from pits 1 – 3 that are placed on the unmined area will receive final grading, while overburden from pits 4 –8 is placed in the mined area? (Repeated from Task 2910). • The seeding schedule is alternately described as immediately following topsoil application (pg. 2-27 and pg 5-57) or as seasonal in nature (p. 5-58) mainly occurring in early spring and late fall (pg. 2-27). Seeding of the spoil piles is described only for piles that exist longer than a year (Sec. 528.310, p. 5-40.) The application should specify in Chapter 2 and Chapter 5 that seeding will immediately follow topsoil application, regardless of season.

R645-301-234.230 is specific to topsoil storage (234. Topsoil Storage) and does not apply to the requirement that ACD “should clearly state the timetable for final grading of the excess spoil pile.” Therefore, the first part of this deficiency referring to the excess spoil pile should be deleted.

This first couple sentences in the second part of this deficiency, which refers to seeding, reflects a misunderstanding of the text referenced in the MRP. On page 2-27 of the MRP, the following text occurs “In other areas where compaction is not a problem, dozer tracking can be used to roughen the surface, and to trap seed, fertilizer, mulch, and other amendments as well as decrease erosion by wind and water. In such cases seeding will be done immediately after this treatment, whereas soil amendments, where required, would be applied over the surface during seedbed preparations. Seeding will mainly occur in the early spring and late fall.” This statement is clear that seeding will occur immediately following the surface roughening treatment, not topsoil application as the Division asserts. The next sentence then clarifies that seeding will mainly occur in the early spring and fall which agrees with all the other text in the MRP and does not

constitute a contradiction in the MRP as implied by this deficiency and the Division's analysis.

In addition, on page 5-57, a general overview of reclamation is provided. Under the introduction of "Major steps in the ongoing reclamation process are:" The following text occurs:

- "Revegetation. Following replacement of topsoil the area will be revegetated by seeding."

Again, this reference does not declare that seeding is "immediately" following topsoil application, as stated by the Division. It only states that seeding follows topsoil replacement in the "Major Steps", which is true and consistent with other statements made in the MRP in reference to seeding. This section is only a general overview of the major steps in the process as clearly stated in the introduction to this text. Two paragraphs later in the same section, it is clarified that: "Revegetation activities will be seasonal in nature. As currently planned, initial seeding will occur at the first planting opportunity following replacement of topsoil." Alton Coal does not understand the Division's confusion related to this text. The Division should correct these misinterpretations of the MRP in the TA and this deficiency.

Seeding is only described for stockpiles that will exist for more than a year because an alternative technique of applying tackifier for soil stabilization is proposed for stockpiles that will exist less than a year (Section 244.100 on page 2-28). Depending on time of year and precipitation, it will likely be difficult to establish a sufficient vegetative cover in less than a full growing season on short term stockpiles and therefore applying tackifier will be a more effective and consistent method for providing short term soil stabilization.

The Division provides no technical basis for requiring seeding of reclamation regardless of the season as stated in the last sentence of this deficiency. The Division's "The Practical Guide to Reclamation in Utah" clearly acknowledges that there is appropriate planting seasons for reclamation (page 93, The Best Time to Seed). In addition, ACD's management has extensive experience in reclamation at similar operations in Utah, Idaho, and Wyoming and has found that fall and early spring planting consistently provides significantly higher revegetation success than planting during other seasons. The Division appears to be contradicting their own guidelines and general reclamation practices in the Western U.S. surface mining industry and must provide a technical basis for the requirement that "The application should specify in Chapter 2 and Chapter 5 that seeding will immediately follow topsoil application, regardless of season." If the Division can not provide a technical basis for this requirement, this deficiency should be removed from the TA.

Chapter 3

- **R645-301-321.220 and R645-301-321.200, Refer to Alluvial Valley Floor Findings, p. 48 of the TA:** Appendix 7-7 and Chapter 3 provides the consultant's estimates of land productivity. Average yield data reported for high levels of management must also be provided in the environmental analysis. Current data may be available from the USDA or an appropriate state natural resource or agricultural agency.

The above deficiency states "Chapter 3 provides the consultant's estimates of land productivity". Only a small part of that statement is correct and this deficiency should be deleted from the TA. The Coal Hollow permit application provided site-specific and other annual biomass productivity estimates for each plant community located in the permit area. These estimates were provided using the three (3) sources below.

- 1) U.S. Department of Agriculture SCS (NRCS, July 1990, Soil Survey of Panguitch Area, Utah: Parts of Garfield, Iron, Kane, and Piute Counties.

This soil survey does not cover the Alton area specifically, but it does cover areas very close to it. The NRCS estimates annual biomass productivity based on soil types. Because this reference estimates generalized productivity values according to soil types, Patrick Collins, Ph.D. (project biologist) consulted with Robert Long, CPSS (project soil scientist) regarding the soils in the Alton area. Mr. Long has conducted an extensive soil survey at the Coal Hollow Project Area. He has 34 years of experience conducting and using the data from soil surveys. He told Dr. Collins to use the "Upland Clay" ecological site classification for the production estimates for the permit area, based on the dominant soil surface texture and existing vegetation.

The referenced "Upland Clay" ecological site is for the Wasatch Mountains South, Major Land Resource Area (MLRA) E47B (also referenced as 47XB in some documents). This ecological site description was developed for areas within the MLRA with: 12 to 16 inches of precipitation; 6,800 to 8,500 feet elevation; ustic soil moisture regime; and freeze free period of 70 to 100 days. These environmental parameters describe the Coal Hollow permit area very well. Ecological descriptions for the "Mountain Zone" have not been written by the NRCS. The data used is the best available.

As for the deficiency above, it states that "Current data may be available from the USDA or an appropriate state natural resource or agricultural agency". That is exactly what was used in one column of the production table that was provided to DOGM in the Coal Hollow permit application dated January 15, 2008. This table has been copied from the permit application document and is shown below (Table 3-34).

- 2) Cedar Creek Associates (1986) in Mine Permit Application. 1987. Utah International, Inc., Alton Coal Project, Alton, Utah.

Table 3-34 of the MRP also includes the results of actual quantitative measurements for production of the native plant communities in the Alton Amphitheater area. These values are much more site-specific than any other known source. Interestingly, the production estimates were very similar to the estimates provided by the NRCS above, suggesting these estimates are quite accurate.

- 3) Field estimates by Mt. Nebo Scientific Research & Consulting, Springville, UT (2007).

Annual biomass production measurements and estimates were not available for non-native and "disturbed" plant communities within the Coal Hollow Permit Area (i.e. Pasture Lands and Rabbitbrush/Sagebrush communities). However, other quantitative data were recorded in these areas by Mt. Nebo Scientific in 2006 and 2007. During these field studies productivity was also estimated using qualitative sample methods. The project biologist from Mt. Nebo Scientific has been conducting production estimates using both quantitative and qualitative methods for over 25 years.

Also, the above deficiency states: "Average yield data reported for high levels of management must also be provided in the environmental analysis". Using the term "high levels of management" would be misleading. We have provided site-specific data as well as those supplied by the USDA in our reports.

In summary, the annual biomass production for the Coal Hollow Project Area was more than adequately addressed in the January 15, 2008 and again in the December 22, 2008 permit application packages that were provided to DOGM. Nevertheless, Robert Long has also provided an additional analyses and response to the above DOGM deficiency following the table below.

Table 3-34: Biomass Production of Plant Communities in the Coal Hollow Permit Area

(1) *Estimates* (from soil and approx. vegetation types) - Source: U.S. Department of Agriculture SCS (NRCS). July 1990. Soil Survey of Panguitch area, Utah: Parts of Garfield, Iron, Kane, and Piute Counties.

(2) *Actual measurements*. - Source: Cedar Creek Associates (1986) in Mine Permit Application. 1987. Utah International, Inc., Alton Coal Project, Alton, Utah.

(*) *Estimates* - Source: Fieldwork during 2007 by Mt. Nebo Scientific, Inc.

MAP SYMBOL (see <i>Vegetation Map</i> , Drawing 3-1)	PLANT COMMUNITY	Pounds/Acre (1)	Pounds/Acre (2)
SB	Sagebrush/Grass	750	762
P	Pasture Land (*)	1100	1100
M	Meadow	2000	2121
P-J	Pinyon-Juniper	50	33
OB	Oak Brush [called <i>Mountain Brush</i> (2)]	1500	1471
RB/SB	Rabbitbrush/Sagebrush (*)	700	700

In addition to the information described above, the following sources of yield data were also evaluated in response to DOGM's request in the deficiency:

Utah State University Extension (www.extension.usu.edu).

This web site provided a link to Utah Rangelands (<http://extension.usu.edu/rangelands/>), which provides a link to the Utah ecological Site Descriptions developed by the Natural Resource Conservation Service (USDA-NRCS). The Alton Coal permit area is located within Major Land Resource Area (MLRA) 47XB-Wasatch Mountains South (<http://www.ut.nrcs.usda.gov/technical/technology/range/mlra47xb.html>). These ecological site descriptions are generic in nature and apply to similar vegetation communities within MLRA 47XB that includes areas within Beaver, Emery, Garfield, Grand, Iron, Kane, Millard, Piute, Sevier, and Wayne counties. The site descriptions only contain estimates of potential rangeland production.

These ecological site descriptions are normally correlated to established soil series. The area within and adjacent to the Alton Coal permit area has not been mapped by the NRCS. The Alton Coal permit soil survey was only able to correlate seven of the major soil types to established soil series. These established soil series are from Colorado (2), Idaho, New Mexico, and Wyoming (2). The other sixteen major soil types could only be correlated to the taxonomic soil family. Therefore, the use of ecological site data to estimate potential rangeland production would not be applicable in the Alton Coal permit area.

There is no production of agricultural crops within the Alton Coal permit area. Grass hay is produced on some pastures east of the permit area. The USU Extension and Utah Department of Agriculture web sites were queried for information on hay production yields, but only limited information was obtained.

The Utah Agricultural Statistics and Utah Department of Agriculture and Food 2007 Annual Report (http://www.agcensus.usda.gov/Publications/2007/Full_Report/Census_by_State/Utah/index.asp).

Prepared by Utah Agricultural Statistics, contained only general information on the number of acres in production and estimates of yield by crop. The information in this report is based on information obtained from farmers and ranchers via phone and mail requests. The data is not scientifically collected. The Kane County Agriculture Profile (http://extension.usu.edu/files/publications/publication/AG_Econ_county-2005-16.pdf) was reviewed, but the only hard numbers for yield were county wide average yields per acre for alfalfa hay and other hay. The level of management for these average yields was not described.

In conclusion, none of these sources provided information or data that would be reasonable to include in the MRP since reliable site-specific information is already provided.

- **R645-301-323 Refer to Fish and Wildlife Resources Findings, p. 27 of the TA:** Drawing 3-1 Vegetation Map and Dwgs. 3-2 through 3-5 (wildlife maps) need to be revised to include the proposed location of the temporary county road realignment.

This deficiency should be deleted from the TA. R645-301-323 refers specifically to "Maps and aerial photographs of the permit area and adjacent area". This reroute of a public road does not meet the definition of the permit or adjacent area as defined by R645-100-200.

- **R645-301-341.230, Refer to Vegetation Reclamation Findings, p. 154 of the TA:** According to the Application, mulch will not be applied to the reclaimed pastureland. The beneficial uses for mulch are outlined in the United States Department of Agriculture research paper, Reclamation on Utah's Emery and Alton coal fields: Techniques and Plant Materials, INT-335, June 1985, page 24, "At the end of the first growing season, frequency of grass plants averaged 92 percent on the ripped area where hay had been rotovated into the soil surface compared to 52 percent on ripped areas receiving no hay amendment. The application must include a commitment to apply mulch or soil amendments for the pastureland areas.

The statement that "mulch will not be applied to the reclaimed pastureland" is incorrect. In the TA, the Division refers to Section 341.230, page 3-53. This reference is to the 01/2008 submittal and does not take into account changes made to the application submitted in 12/2008 which is the current version under review by the Division. These

changes are clearly outlined in the redline version of the document, as requested by the Division. In the revised submittal, Section 341.230 is on page 3-59 and not 3-53 and states "mulching will follow one of the described methods for all reclaim areas".

Sage-Grouse

ACD has been proactive in addressing the sage-grouse population in the Alton area. Significant resources have already been allocated toward the preservation of this population including: juniper removal on private land, funding in support of monitoring and research, inclusion of a sage-grouse expert (Dr. Steven Petersen) on the ACD technical support team and involvement/coordination of the Division consultations with UDWR, USFWS and CoCARM.

In addition to the cooperation and work that has already been completed, ACD has also proposed an extensive mitigation plan (provided as Appendix 3-5 in the MRP) should the permit be approved. This plan includes all **feasible** mitigations as recommended by Dr. Petersen and in consultations with DOGM, UDWR, USFWS and CoCARM.

All the work completed along with the proposed mitigation plan, has been provided by ACD voluntarily and exceeds regulatory requirements. **Utah Administrative Code R645-48-9 states: "Species of concern designations, wildlife habitat designations, or management recommendations may not be used by governmental entities as a basis to involuntarily restrict the private property rights of landowners and their lessees or permittees."** Also, in the Greater-Sage Grouse Interim Status Update by the U.S. Fish and Wildlife Service dated 10/31/2008, the statement is made that **"There are no special provisions for land management relevant to sage-grouse on private lands"** and **"many states have laws that influence the degree to which sage-grouse and sagebrush habitats factor into land management decisions."** This report can be viewed at the following web link: http://www.fws.gov/mountain-prairie/species/birds/sagegrouse/GSG_II_ISU_11-5-08.pdf

The TA includes a long list of requirements for acquiring a permit directly connected to mitigation requirements for greater sage-grouse. These requirements are well beyond what ACD has voluntarily proposed. This list, in many areas, does not provide a technical basis for the requirements nor does the Division account for private land owner rights as they exist in the State of Utah.

These additional mitigation measures are beyond the authority of the DOGM and restrict the private property rights of the landowner and the lessee contrary to the Utah Division of Wildlife Rule R645-48-9. Refer to Exhibit 2 for ACD's legal analysis of DOGM's findings for Sage Grouse.

In addition, some of the mitigation proposed by ACD is challenged by the DOGM, on the basis of effectiveness. As the DOGM is aware, there are few peer reviewed sources of documentation on the interactions of surface coal mining with sage-grouse. ACD has volunteered these mitigations based on their feasibility in the project area, current scientific literature and recommendations from sage-grouse experts, which are the most

reliable resources available. If the DOGM requires this level of assurance, ACD will be forced to remove this mitigation from consideration.

The following responses to each sage-grouse deficiency also support removing all the deficiencies from the TA which are related specifically to sage-grouse:

- **R645-301-333, Refer to Fish and Wildlife Resources Findings, p. 100 of the TA:** The application needs to include a predator control plan that addresses how wildlife species and human activity will be managed to protect Sage Grouse.

This deficiency should be deleted from the TA. The mine will work closely with the Division of Wildlife Resources (DWR) to control predators that impact local sage-grouse populations. Since the state regulates the take of wildlife species and predator control is outside the regulatory authority of mine official, contractors, and employees, the control of predator species will be directed by the DWR (more specifically predator biologists). Species of immediate concern include common ravens, coyotes, red fox, raccoons and other predator species common in the Alton area.

- **R645-301-322, -301-333, -301-342, -301-358, Refer to Fish and Wildlife Resources Findings, p. 101 of the TA**

- The application needs to include a commitment not to disturb the lek during the breeding season including some buffer. The application states on page 3-43, "...mining activities will be minimized so that the lowest disturbance will be created during the breeding season at areas adjacent to the original lek". The term "minimized" is too subjective and "lowest disturbance" needs to be defined. The application must provide specific provisions to avoid the lek during the breeding season.

The possibility for this commitment has come up in the sage-grouse meetings with the Division and other agencies before. Each time it was suggested, ACD provided a full explanation regarding its feasibility during the mining operations. This explanation is again provided below.

The only way to "include a commitment not to disturb the lek during breeding season, including some buffer" is to cease mining operations during the breeding season. Depending on how the breeding season is specifically defined, this commitment could require cessation of mining from February to July. This level of commitment is infeasible for the proposed mine.

Based on the dynamic nature of surface coal mining operations, ACD can not commit to any further restrictions than to "minimize" activity near the lek during the breeding season. ACD reserves the right to conduct necessary operations to make the Coal Hollow Mine an efficient and feasible mining project, within the regulatory guidelines. This requires continuous mining operations to maintain a steady and reliable coal supply to customers. This standard is required even during the sage-grouse breeding season. At

this time, ACD can not accurately predict the specific activities which will be required near and within the lek area during the breeding season since timing depends on numerous factors including actual contract volumes, timing of permit approval, etc. Once mining activities approach the lek area (if during breeding season), ACD proposed to make a voluntary commitment to "minimize" activities to only those necessary for continuous coal production. Since this commitment appears too vague to the Division and ACD can not further define the necessary mining activities during the breeding season, this commitment will be removed from the Mitigation plan.

- Livestock grazing is not acceptable as sage-grouse mitigation as suggest on p. 3-43. Example: During the October 1, 2 tour of Robinson creek; it was obvious that the landowner actively partakes in sage-brush removal treatments (maybe the herbicide spike?). Further, excessive soil compaction and almost complete lack of understory (other than non-native cow forage like crested wheat-grass) indicate a heavily overgrazed pasture. This pre-mining land use is in no way beneficial to sage-grouse. The applicant needs to revise this section of the application.

Justification for grazing in the lek area has been described in the MRP. Along with other methods, ACDs mitigation plan for the sage-grouse in the Alton area has included improving surrounding habitat as well as restoring the existing lek to its pre-mining condition. This is private property and grazing is conducted in the lek. It therefore seems prudent to restore current management practices on the property subsequent to the mining activities.

The current lek is located in a low-level pasture in the south end of the proposed mining area. The lek is dominated by pasture grasses such as timothy, orchardgrass, and Kentucky bluegrass. With elevated soil water conditions, these plants can potentially reach maximum height production. Timothy is a perennial species that can grow from 20-40" in height. Orchardgrass is a perennial species that has a maximum height of approximately 48". Kentucky bluegrass is a perennial species that can grow to maximum heights of 36".

Several studies describe the plant structure of greater sage-grouse leks. Leks occur in sparsely vegetated areas (surrounded by sagebrush communities) that provide escape and protection from predators (Gill 1965, Connelly et al. 1981, Connelly et al. 2000, Call and Maser 1985, Crawford et al. 2004). After mining, the Alton lek will be restored to resemble pre-disturbance conditions including plant species composition. Depending on post-mining soil water availability and the presence of dominated perennial grass species, vegetation growth may exceed the height tolerated by displaying sage-grouse during the lekking period. With excessive plant growth, sage-grouse may choose not to attend the lek for display.

If needed, the reduction of plant growth may be required to create "sparsely vegetated conditions" in the lekking area, by reducing both living and decadent plant materials. In an attempt to restore the lek to its pre-mining condition, current (or present) management

practices should be considered which includes livestock grazing. Once vegetation has become established on the lek, it will be monitored. If plant structure appears to be limiting sage-grouse mating behavior, DOGM and DWR will be contacted to identify methods acceptable for controlling plant growth on the lek (e.g. mowing or grazing). In summary, methods to control plant growth will be considered if post-mining monitoring reports indicate a reduction in the plant growth is warranted to return the lek to its pre-mining conditions.

- Page 3-46. Establishment of a Core Sage-Grouse Conservation Area. The applicant needs to initiate treatments to this area to the maximum extent feasible, as soon as possible. These treatments take time, at least a couple of years. Given the timeline to excavate the coal, these treatments need to happen as soon as possible, and the area needs to be rested from cattle grazing (standard is typically at least two years of resting) to ensure establishment of planted forbs and grasses.

Juniper removal in the Conservation Area has already been accomplished and other proposed treatments as provided in Appendix 3-5 of the MRP will only be performed once a permit is issued by the Division. The Division does not have authority to require these additional mitigation measures as conditions for permit approval.

- **R645-301-322, -301-333, -301-342, -301-358, Refer to Fish and Wildlife Resources Findings, p. 100 of the TA:** The following deficiencies pertain to Appendix 3-1 Alton Sage-Grouse Habitat Assessment and Mitigation Plan.

The applicant needs to describe how the Conservation Area will be enhanced for Sage-Grouse especially during the breeding season. • Areas to be cleared of young juniper trees need to be identified. • Drawing 3-5, Sage Grouse brood habitat and Conservation area map, identifies the location of the 72 acre juniper removal plot. The intact sagebrush and surrounding juniper woodland areas need to be identified. • A time line for implementation needs to be included for the removal of young junipers and the cutting back of the juniper woodlands. • Areas where “juniper woodlands surrounding intact stands can be cut back to increase patch size and the amount of area that has potential for nest site selection by hens” must be identified on a vegetation map and quantified in terms of acreages. • The application needs to include a clear, concise and comprehensive mitigation plan that includes the following criteria:

- A detailed description of the project.
- A map, 1”=500’, that is consistent with the current vegetation maps in the application that clearly identifies the vegetation and the project area.
- Right of entry from the surface owners if other than ACD.
- A detailed description of the methodology and a time line for implementation.

- A seed mix, methodology for dispersal and rate of application.
- A description of the site restoration to prevent erosion.
- Funding for mitigation.

The application needs to include the location, acreages and a time line for removal of the junipers. • The applicant needs to include a timetable for importing Sage Grouse, the number of birds and the appropriate clearances from DWR, USFWS, BLM.

These deficiencies should be deleted from the TA. In addition to the language in the main body of the MRP regarding sensitive species, three appendices (Appendix 3-1, Appendix 3-3 and Appendix 3-5) have been included to address the sage-grouse in the Alton area. Each of these appendices was submitted in different submittals to the Division. After each submittal, they were reviewed by the Division and other agencies, which provided comments. Accordingly, the comments were addressed and the next sage-grouse appendix was written. In other words, the appendices were written in chronological order and each subsequent appendix was a result of comments from the previous one. Therefore, the last appendix written (Appendix 3-5) explains ACD's final mitigation plan for sage-grouse and deficiencies by the Division should have only addressed this Appendix. Yet, the previous Appendices (Appendix 3-1 and 3-3) should remain in the MRP because they continue to provide valuable information regarding the natural history, previous work and process of addressing the sage-grouse issues in the Alton area. That said, these deficiencies were again addressed in one of the following deficiencies regarding Appendix 3-5 (refer to #3 in R645-301-322, -301-333, -301-342, and -301-358, Refer to Fish and Wildlife Resources Findings, p. 102 of the TA: Restated from Task 2910. The following deficiencies pertain to Appendix 3- 5 Alton Sage-Grouse Habitat Mitigation Plan).

The DWR has clearly stated that they will not support importing sage grouse to the Alton lek and therefore this activity has not been included in the final mitigation plan provided in the MRP as Appendix 3-5. This activity should be reevaluated by the Division and DWR.

- **R645-301-322, -301-333, -301-342, -301-358, Refer to Fish and Wildlife Resources Findings, p. 102 of the TA:** The following deficiencies pertain to Appendix 3-3, Sage-Grouse Distribution and habitat improvement Alton, Utah.

The Division requests an update on the status of the development of the alfalfa field. •The applicant needs to describe in detail the application techniques that will be used in lieu of developing an alfalfa field for brood rearing habitat. • The research on the plant insect relation ships needs to be completed and included in the application. • The applicant needs to provide an update on the status of predator control arrangements and include a complete and adequate predator control plan, see comments under Protection and Enhancement. •The applicant needs to provide an update on the status of juniper removal perhaps in terms of acres of restored habitat and a map delineating the restored areas.

These deficiencies should be deleted from the TA. A hydrological assessment was conducted following the initial proposal to develop an alfalfa field near Sink valley as brood rearing habitat. It was determined from this assessment that insufficient water is available to maintain alfalfa crop production. Therefore, this proposed mitigation will not be possible. As a result, the proposed alfalfa field was removed from the Mitigation Plan in Appendix 3-5 of the MRP. The status of juniper removal has already been provided in Chapter 3 of the MRP.

The requirement to research plant – insect interactions as listed in this deficiency is excessive. The discussion in the MRP that describes enhancing insect diversity and availability was intended to describe some of the benefits of increasing plant species diversity and selecting plant species for restoration, enhancement and mitigation of habitat. Conducting research on insect-plant interactions is not realistic since this type of research is very difficult to conduct, expensive, and could potentially take several years to complete.

The other requirements in this deficiency (predator control and juniper removal) are addressed in other sections of this memorandum.

- **R645-301-322, -301-333, -301-342, and -301-358, Refer to Fish and Wildlife Resources Findings, p. 102 of the TA:** Restated from Task 2910. The following deficiencies pertain to Appendix 3- 5 Alton Sage-Grouse Habitat Mitigation Plan.

1.) Minimize impacts to the birds from mining activities. The application describes relocating the Sage Grouse birds to alternative sites (p. 12, App. 3-5, and App. 3-1, p. 3-43). This technique worked in 1978, but failed in 2008, indicating that this methodology needs improvement. The application needs to detail exactly how the applicant intends to improve the technique, based upon past experience. For example, the idea to include white markings on the decoys may not work, and is based on one or two anecdotal examples. Adding white might deter the birds. The application must include a simple experimental design to test the techniques before excavating the lek. This could be conducted on alternative populations, but also needs to be attempted on site, during the 2010 breeding season. • The application needs to include a discussion of additional studies or examples where the experimental design has worked successfully or where it has been tried and failed, and a comparison of conditions between these studies and the Coal Hollow Mine. • The mitigation plan needs to include the distances from the nearby alternative lek site to the existing lek or the mining activities. The Plan should also discuss or evaluate the habitat features of the new site and whether they are conducive to sage-grouse lekking. • The plan needs to include a description of where the isolation berm is located in relation to the conservation area, leks and mining areas and a discussion of how the

proposed isolation berm may serve as a potential perch or hiding place for predators and become a threat to the Grouse.

These deficiencies should be deleted from the TA. The proposal to "relocate" sage-grouse to alternative sites has been removed from consideration based on consultation with DWR. It is currently not being considered for the management of the Alton population (see Appendix 3-5). An attempt to shift breeding behavior away from the lek to an alternative location approximately 200-300 ft away was unsuccessful in 2008, likely because no disturbance was present at the lek site that would encourage movement away from a site with displaying males already present. .

Since little is known about shifting breeding behavior to alternate lek sites and is not cited in current literature, and that current methods that were being evaluated are thought to potentially deter the birds from the alternate site (i.e. adding white paint or material), this proposed activity will not be utilized for the Alton population during mining activities.

A full discussion of alternative lek sites is provided in Appendix 3-1, pages 18 through 19 in the MRP. This discussion shows alternative lek sites in relation to the permit area and describes the habitat features and how they relate to the current lek site.

A soil berm was initially proposed to separate the conservation area from the mining activities for both a visual and auditory barrier. Based on the Divisions concerns in the TA related specifically to this potential mitigation as a possible raptor perch, this berm will be removed from the Mitigation Plan.

2.) Enhance current sage-grouse habitat. The Plan needs to include a comparison of the Alton site to the site in the Bates, et al (2000) paper to determine if similar results be expected, or if there are substantial differences between the two sites (e.g., precipitation, climate, vegetation types) or would invasive species (e.g., cheatgrass) be of greater concern at the Alton site? • A brush bullhog rather than a tracked excavator and dump truck should be used to shred the trees leaving the shredded material on site. •The plan needs to include a commitment to conduct tree removal activities outside of the avian nesting season to avoid the take of eggs or young of other migratory birds. •The Plan contemplates mechanical sagebrush treatments in addition to removal of juniper, pine and Gambel oak. There is not enough information in the Plan (e.g., location of treatments, size of treatments, need for treatments, type of treatments, or current habitat condition) to adequately evaluate the need or potential success of sagebrush removal. The Sagebrush treatments need to be specifically targeted to the needs of the local sage-grouse population and to address the limiting factors in the sagebrush habitat.

The extraction of juniper trees in the conservation area has been completed. Trees were initially stacked and then burned to prevent perching sites for raptors. During mining

operations, additional trees will be removed through the excavation process and then restored to a sagebrush community after mining is complete. The DWR will also be consulted to discuss additional areas for juniper removal.

Bullhogging is a relatively new method for controlling juniper. Therefore, limited information is available in the literature on short or long-term plant community response to juniper removal using this method. Since juniper tree removal is complete in the conservation area, additional juniper removal will result from excavation for mining activities and from recommendations provided by the DWR. Bullhogging is an effective method for reducing tree cover and perching structures and should be considered when treating sites outside of the mining area or conservation area, but the methods used by ACD for tree removal using the grapple claw and track hoe have also proven very successful for tree removal. This method offers little disturbance to the desirable grasses, forbs and shrubs present in the treatment areas. Consequently, it may prove more successful than bullhogging in some areas when preserving current understory species or when the establishment of additional herbaceous and shrub plants are important.

Literature cited on plant community responses to juniper removal (i.e. Bates et al. 2000) was not intended to be a direct comparison with the Alton area. There are no such studies. However, the citation was applicable to Alton because it provides the results of studies in other relatively similar areas in the western United States that describe these responses.

The other items listed in this deficiency are requirements considered excessive by ACD and therefore, constitute a violation of private property rights in the State of Utah.

3) Create a conservation area for the sage-grouse that will never be mined. The Plan needs to specify the location, size or current condition of the area. The application needs to include a narrative that explains why this area was selected for protection. The Plan mentions several uses within the Conservation Area including roosting, breeding and nesting. In order to evaluate the success of the Conservation Area, the plan needs to include information that answers the following questions:
Is the area large enough to support all three uses?
What is the potential for diminishing the value of the area for roosting if the trees are removed?
Do sage-grouse already use the area and what impact tree clearing will have on the grouse?
How will grouse respond to the mining activities?
What is the distance of the Conservation Area from active mining activities. is not specified in the Plan, nor its relation to the new lek?

Juniper removal has already been completed for the conservation area and the location with acreage is shown on Drawing 3-5 in the MRP. The vegetative communities within the conservation area are clearly shown on Drawing 3-1.

The purpose of this juniper removal has been to create intact sagebrush communities that provide roosting, hiding, breeding, and foraging habitat for greater sage-grouse (Crawford et al. 2004). Roosting has been identified within the conservation area from sage-grouse fecal deposits typical of roosting behavior. Birds have also been flushed from this area at different times of the year on many different occasions. According to Nicki Frey (USU wildlife biologist), sage-grouse have been known to use this area for nesting (based on a single observation). The conservation area is limited in size, but can provide adequate shrub cover (15-25%) for nesting hens and for raising brood. Furthermore, the interior habitat is distant from nearby juniper and oak trees and powerlines reducing predation potential. To improve nesting and brood rearing habitat, over 10,000 juniper trees were extracted, piled, and burned in the conservation area in 2007-8 to enhance sage-grouse habitat within this area. Birds have been found using regions further to the west for roosting during summer months. Extracting juniper trees from the intact sagebrush stand could potentially limit roost sites for shade during hotter times of the season, however, over time these trees can impair sagebrush ecosystem structure and degrade critical sage-grouse habitat. Many sites outside the conservation area or at the sagebrush-juniper fringe can provide shade-available roosting habitat. Additionally, sage-grouse can also use sagebrush or other shrub and herbaceous species for roosting and hiding cover.

The conservation area is located directly east of the lek and adjacent to proposed mining activities. This area was chosen because the proposed mining operations are not planned for this area based on the overburden depth. It is unknown how sage-grouse will respond to mining activities in the conservation area, especially since mining activities are not limited to a single area throughout the duration of the project, but will shift as coal is extracted and sites are reclaimed. There are two alternative lek sites identified in Appendix 3-1 of the MRP. Figure 14 of Appendix 3-1 shows the location of these sites in relation to the permit area.

4) Provide a corridor between north (Heut's Ranch) and south (Alton Sink Valley) populations to promote gene transfer and increase population numbers. The plan needs to include mitigation measures to protect and improve the habitat quality near Heut's Ranch.

The Division should remove this item from the deficiency list. As part of the MRP, ACD has voluntarily committed to providing funding for crews to cut and remove juniper trees from a potential corridor between the Heut's Ranch lek and Alton. This corridor (and the Heut's Ranch lek) is located on land which is privately owned and not under the control of ACD. Although much of this land has been cleared for the birds by this writing, the Division and other interested agencies will need to negotiate the details of more corridor improvements with the private land owner should they choose to proceed with this habitat improvement. ACD has never intended to improve the Heut's Ranch lek itself.

5) Restore land disturbed by mining activities to enhance sage-grouse habitat. Bareroot and containerized plants should be planted in addition to and not in place of forb seed. •The application needs to include a plan for monitoring the Sage grouse population during the reclamation liability period.

Containerized plants for two sagebrush species were included in the final revegetation seed mixtures for the Sagebrush/Grass communities in all the MRP submittals to the Division (refer to submittals dated: June 16, 2006; January 15, 2008; December 18, 2008). This deficiency should be deleted.

The mine will rely on the DWR to obtain accurate lek counts each spring and to assist the mine in monitoring sage-grouse population patterns during mining activities. In March 2009, 15 sage-grouse (14 males, 1 female) were collared from the Heut's Ranch area and are being monitored by seasonal field technicians. The data collected from this activity will provide information regarding sage-grouse habitat use patterns and connectivity between these two neighboring populations.

Chapter 4

- **R645-301-422, Refer to Air Pollution Control Plan Findings, p. 88 of the TA:** The Notice of Intent (App. 4-2) prepared by ACD to obtain an Air Quality permit states in Item 14 that the mine open mining area shall not exceed limits established by the DOGM. This is not acceptable, because DOGM does not evaluate the size of the open pit in relation to fugitive dust and because without an indication of the size of the open pit area, the DAQ can not accurately calculate fugitive dust emissions. Therefore, the NOI should describe the dimension of the open pit areas.

Item 14 in the Appendix 4-2 states "The open or disturbed area shall not exceed limits set forth by the Division of Oil, Gas and Mining without written consent from the Executive Secretary." This statement is simply an acknowledgment of DOGM's regulatory authority related to backfilling/grading of pits and contemporaneous reclamation, which does limit the total disturbed and open pit areas. To extrapolate this statement to imply DOGM evaluates "the size of the open pit in relation to fugitive dust" is incorrect and does not accurately reflect the intent nor the actual text in the referenced statement. Also, the DAQ does not calculate the fugitive dust emissions but requires the proponent provide this information for evaluation by the DAQ. ACD has provided DAQ with an emissions inventory and air dispersion model that appropriately reflects the actual sizes of the pits. Both the emissions inventory and modeling are currently under evaluation by DAQ which has the expertise to appropriately determine if more information is required. This deficiency should be deleted from the TA because it does not provide any actionable items that apply specifically to the UDOGM mine permitting process.

Chapter 5

- **R645-301-352, -301-553, Refer to Contemporaneous Reclamation Findings, p. 152 of the TA:** Section 341.100 on page 3-44 states that “A detailed schedule and timetable for the completion of each major step in the mine plan has been included in Chapter 5 of the MRP.” Chapter 5 includes a detailed description of each step in the surface mining process. However there are no schedules or timetables included in chapter 5 that are pertinent to contemporaneous reclamation. Chapter 5 needs to be revised to include a detailed schedule and timetable for each major step in the mine plan, including contemporaneous reclamation.

The Division should remove this item from the deficiency list. The reclamation plan is provided in both a year by year format and major mining step format. Both the analysis in the TA and this deficiency fails to recognize or take into account Drawing 5-38 which provides a year by year time schedule for completing reclamation throughout the life of the project. This drawing in combination with the step by step reclamation process shown in Drawings 5-17, 5-18 and 5-19 clearly establishes that the contemporaneous reclamation process is planned out thoroughly.

- **R645-301.514.120, Refer to Road Systems and Other Transportation Facilities Findings, p. 149 of the TA:** The application must state that copies of the spoil placement engineering inspection reports for the County road right-of-way and the Swapp Road will be provided to the Division. These inspection reports must document the Proctor compaction and other design requirements to be achieved for the reconstructed roads. The Division can then coordinate with Kane County and the Applicant regarding sub-grade adequacy for reconstruction of the County Road #136 and the Swapp Road in the mined out area.

The Division should remove this item from the deficiency list. The entire section of R645-301.514.100 applies specifically to Excess Spoil. Neither of the roads described are planned for construction on areas containing excess spoil and therefore the referenced regulation does not apply to the request.

- **R645-301-526.220, Refer to Mining Operations and Facilities Findings, p. 83 of the TA:** Restated from Task 2910, The application must describe the effect of lighting the 24 hour operation on the night sky as seen from Bryce Canyon National Park and the Dixie National Forest. This issue was specifically raised in comments sent to the Division of Oil Gas and Mining by the public and from the District Ranger of the Dixie National Forest (2008/Incoming/0048.doc).

The Division does not have authority to regulate night sky as part of the Utah Coal Program. Comments on the night sky set forth in Secretary Andrus' unsuitability decision relate to mining on federal lands, not to mining on private lands as proposed in the mine permit application. This federal issue has been analyzed under the National Environmental Policy Act in the Alton Coal Tract Draft EIS regarding federal coal

leasing. The comments submitted by the Dixie National Forest is a copy of their comment submitted for the draft EIS with a revised cover letter containing a blanket statement that all the comments related to federal lands also apply to this private lands proposal. Contrary to this representation, the night sky issue arises in the context of federal lands and federal actions under NEPA. The Division should remove this item from the deficiency list. Refer to Exhibit 3 for ACD's legal analysis of the Division's findings for night sky.

- **R645-301-542.100, Refer to Backfilling and Grading Findings, p. 143 of the TA:** The application will describe how the Applicant will provide progress reports detailing when the rough backfilling and grading of Pits 2 and 3 will be initiated, and the continued submittal of those progress reports addressing rough backfilling and grading for the Phases 1, 2, and 3 coal recovery areas. The application will indicate reporting every 60 days, the following five items:
 1. Coal recovery as it exists on a plan view map of the numbered pits.
 2. The areas (coal recovery pits) where rough backfilling and grading has been completed.
 3. The areas where coal recovery has been completed and contemporaneous rough backfilling and grading is occurring.
 4. The areas where grading has been completed, and topsoil is being placed.
 5. The areas where seeding using the Division approved reclamation seed mix has occurred.

The Division does not provide the regulatory support for requiring such detailed reporting requirements. It is common practice (on private land) to provide annual reports which contain this type of information. Alton Coal will document this information once a year and provide it to the Division in an annual report. This reporting frequency should be changed to annual reporting or the Division must provide regulatory support for requiring the stated reporting frequency.

- **R645-301-553, Refer to Backfilling and Grading Findings, p. 143 of the TA:** The Division can not support the variance from the 60 day/1,500 feet requirement for backfilling and grading based upon the supposition of acquiring the adjacent federal leases (which have not yet been made available). The variance request should be removed from the plan. The Division recommends that ACD apply for this variance ninety days before completion of coal recovery in Pit 24 and should include timely information relative to the procurement of any adjacent Federal coal leases.

The Division should remove this item from the deficiency list and grant the request for variance as allowed by R645-301-553. ACD made the commitment to meet the 60 day or 1,500 linear feet backfilling requirement in all pits until the mine plan proceeds to Pit 24 where there becomes a lack of spoil material to maintain this standard as shown in Drawing 5-19 and provided in the backfill verse spoil tables in Section 553. ACD needs to obtain the variance at the time of the mine permit approval to provide assurance that

the variance will be granted and to not inhibit the development of the adjacent federal coal reserves as explained in the MRP. ACD has made good progress in obtaining the federal coal lease by application. The Draft EIS for the coal lease completion is expected to be released for public comment in late summer to early fall 2009.

Chapter 7 and AVF

- **R645-301-731.300, Refer to Hydrologic Information Findings, p.125 of the TA:** Appendix 6-2 shows unacceptable levels of selenium in the zone below the coal and in the vicinity of CH-06-05, below 35 ft. where either insufficient sample provides no information on selenium levels or high levels of selenium were recorded. To ensure that selenium levels are adequately represented by these six core holes and that selenium levels in the surface and in the submerged water table remain low, the Division will require a selenium monitoring plan for soils and overburden during final placement. Refer to Attachment 1 of the Division's 2008 Guidelines for Topsoil and Overburden Handling when writing the Coal Hollow selenium monitoring plan. **and R645-301-121.200, Refer to Hydrology Operations Findings, p. 125 of the TA:** The Applicant states in Section 728.332 that Wyoming considers a value of 0.3 mg/kg selenium as suitable and between 0.3 and 0.8 mg/kg selenium as marginally suitable for topsoil and topsoil substitute. This statement is inaccurate and must be corrected. Refer to Acid/Toxic discussion above.

The Division's requirement for a selenium monitoring plan for soils and overburden does not appear to be based on any reasonable necessity for such a plan. A plot showing the concentrations of water soluble selenium in overburden and underburden materials from the proposed Coal Hollow Mine area is presented in Exhibit 6. Selenium concentrations were measured in both the alluvium overburden (26 samples) and Tropic Shale overburden (23 samples). In this figure, the selenium concentrations from the samples are plotted from left to right on the graph in order of ascending concentration. It is immediately apparent from the attached figure that none of the overburden materials exceed any of the selenium limits, even for the upper four feet of fill in perennial drainages. In fact, only a single overburden sample exceeds 0.05 mg/kg, or half of this most restrictive selenium limit. Assuming that run-of-mine material will be a mix of overburden from both the alluvium and the Tropic Shale and that the sample distribution is reasonably distributed, the average water soluble selenium concentration (based on the average of all overburden samples and using the conservative assumption that samples with a laboratory detection of <0.01 mg/kg concentration have a concentration of 0.01 mg/kg) would be about 0.018 mg/kg, which is only 18% of even the most restrictive selenium placement limit. Supplemental laboratory analyses for total selenium (which analyses would include any non-water-soluble forms of selenium) were also performed on the overburden and underburden samples. None of the samples analyzed for total selenium had concentrations exceeding the laboratory detection limit (5 mg/kg).

Somewhat higher concentrations were identified in the underburden (Dakota Formation) sediments underlying the coal seam, with concentrations ranging from 0.02 mg/kg, to 0.20 mg/kg. While some of the Dakota Formation underburden samples contained selenium concentrations that would not be suitable for the most restrictive placement in the upper four feet, there is no plan to extract the Dakota Formation materials from the mining areas. These materials are situated beneath the coal seam and there is no reasonable purpose for the mine to displace these materials. However, as a grossly conservative estimate, if it were assumed that fully a quarter of all the fill material from the mine were to be composed of the Dakota Formation with the highest measured selenium concentration (0.2 mg/kg), it would be calculated that the composite run-of-mine material would have a water soluble selenium concentration of only about 0.063 mg/kg, which would then, in terms of selenium concentration, be suitable for placement in even the most restrictive areas in the upper four feet of fill.

For a comparative reference, it is useful to examine the selenium requirements outlined in the adjoining state of Wyoming, which is a state that has long had an extensive surface coal mining industry, and where selenium issues are known to exist. The state of Wyoming considers materials with a soluble selenium concentration of up to 0.3 ppm (mg/kg) as being suitable for topsoil or topsoil substitute placement (see attached in Exhibit 8, Table 1-2 from page 41 of the Wyoming Department of environmental quality land quality division, Guideline No. 1 Topsoil and Overburden (11/1996 update)). Under these Wyoming criteria, any of the overburden or underburden materials sampled in the proposed mine area (including the Dakota Formation underburden) would easily qualify for topsoil use in terms of selenium criteria.

The Division indicates that one of the purposes of the required selenium monitoring plan for soils and overburden is to ensure that selenium levels in the submerged water table remain low. As the division is aware, the Coal Hollow Mine MRP has been designed to minimize the amount of water that could potentially migrate through the backfilled pit areas. Additionally, the Division in its March 2009 Technical Analysis is requiring that reclamation designs for the eastern permit boundary where the mining pits meet the undisturbed alluvium will be designed so as to minimize the drainage from the alluvium into the fill in the reclaimed pits (see R645-301-731.800 on page 125 of the TA). Additionally, it is considered improbable that large fluxes of water will migrate through the fill material, which will be composed primarily of a non-stratified mixture of clays, silts, and shales, which will accordingly likely be low in hydraulic conductivity.

The Division likewise provides no basis for the requirement that a selenium monitoring plan for soils and overburden be implemented to ensure that "selenium levels are adequately represented by these six core holes". There is absolutely no reason to question the validity of the laboratory selenium analyses, which were performed by a reputable, qualified analytical laboratory. Additionally, the acquisition of data from six drill holes spread out over the 200 acre proposed mine footprint (one hole per 33.3 acres) is considered entirely adequate. Again it is instructive to refer to regulations in the adjoining state of Wyoming which has had extensive experience in permitting surface coal mines. It is recommended by the state of Wyoming that overburden sampling should

occur at a spacing of one drill hole per 80 acres in an initial phase, followed by a second phase of developmental and exploratory drilling which would bring the combined total to 16 holes per section, or one hole per 40 acres (see pages 8 and 9 of the Wyoming Department of environmental quality land quality division, Guideline No. 1 Topsoil and Overburden (11/1996 update)). Thus, under the Wyoming standard, the overburden sampling intensity as currently completed in the proposed Coal Hollow Mine area exceeds their standard by 20 percent.

It was noted on page 125 of the Division's TA that there were zones in CH-06-05 for which there was insufficient sample for water soluble selenium analysis and that there was no information provided for these intervals. The intervals to which the Division is referring are part of the alluvial system. Apparently, the Division is making the assumption that because no information was provided for the water soluble selenium concentrations in this zone, the Division will presume that the selenium concentrations in this zone are unacceptable. This assumption lacks any valid geologic basis. There is no reason to assume that the selenium concentrations in this zone are greater than elsewhere in the alluvium. The sediments comprising the alluvial system in the valley do not constitute a laterally continuous formation with uniform layering, chemical and physical composition, or total thickness. Rather, the alluvial sediments are variable both laterally and vertically throughout the valley as a result of the localized depositional environments in which the alluvial sediments were transported and emplaced. In other words, a sample collected from 20 feet below the ground surface in one location may have little or no genetic relationship or similarity with a sample of the alluvium collected from 20 feet below the ground surface in a different part of the valley. Consequently, there is no reason to suspect that just because an individual alluvial sediment sample in one location was not able to be analyzed, then somehow this would indicate that there is a fatal gap in the understanding of the alluvial sediments as a whole. Rather, the composition of the alluvial sediments is best understood by looking at an average of the analytical results for all 26 of the alluvial samples from the well-distributed drillholes in the 200 acre mine area. None of the 26 alluvium samples showed levels of selenium exceeding even half of the most restrictive selenium limits set fourth by the Division. Taken as a composite, the average water soluble selenium concentration of the alluvium is less than 0.015 mg/kg, which is only 15% of even the most restrictive selenium placement limit. There is no reason to suspect that analyses from a few additional samples of the same alluvial material would show appreciably different results than those described here.

Together, this information overwhelmingly indicates that there is no selenium problem in the overburden materials at the proposed Coal Hollow Mine site.

It is inappropriate for the Division to require a selenium monitoring plan for soils and overburden when there is no reasonable basis for this requirement. This deficiency should be removed from the TA.

- **R645-302-321.260, Refer to Alluvial Valley Floor Findings, p. 48 of the TA:** Section 6.4 states that “the topographic characteristics of most lands within the project area are compatible with flood irrigation techniques”. Available water rights and historical irrigation indicate flood irrigation is important to agricultural use. The application needs to include a mitigation plan for restoring water to these areas.

This deficiency should be deleted from the TA. The repeated statements by the Division that flood irrigation is important to agricultural use in Sink Valley are not consistent with the observed conditions in the valley. Water is a precious resource in the Western United States, and particularly so in the arid lands of southern Utah. To imply that there is water available for a thriving, large-scale agricultural area in the valley is simply incorrect. Numerous attempts have been made over the past many decades to develop any and all available water sources to sustain agriculture and correspondingly, the livelihoods of the residents. This is readily apparent in the diligence water rights claims that have been filed on virtually every significant flowing water source in the valley. Flood irrigation of some lands in the valley has occurred sporadically in the past during wet climatic cycles and when water was available. However, in spite of attempts to develop all available resources, it is apparent that the attempts to flood irrigate the lands were largely unsuccessful. It is evident that in today's farming economy, irrigation using limited quantities of spring water, with its unpredictable year to year reliability, does not appear to be an economically viable activity in Sink Valley. This conclusion is supported by the NRCS determination that Prime Farmlands do not exist in the valley, largely because of the lack of a reliable water source for agriculture.

An investigation into the spring water resources available for agricultural use in Sink Valley sheds light on this situation. As shown in the Exhibit 7 Water Right Availability Table, approximately 1,313 gallons per minute of spring water has been appropriated in Sink Valley for agricultural use. It should be noted that each of the spring water rights listed in Exhibit 7 are diligence claims. For all of the springs with irrigation use, at the time these diligence claims were filed, the State Engineer did not require the diligence statements to be verified. Based on baseline monitoring of these springs conducted during the period 2005-2009, on average only about 45.1 gpm has actually been available for use in the entire valley. This represents a water availability of only about 3.4 percent of the flows specified in the associated water rights listings. It is also noteworthy that the spring irrigation water rights are held by three separate families, such that no one user controls more than a portion of the scant available water.

In addition to the springs, flows from Swapp Hollow creek and the Water Canyon springs (the only other reasonably reliable water sources in the valley) provided an average about 51 gpm and 22.4 gpm, respectively during this time period. The water from these two sources discharges primarily in the early part of the year and wanes considerably during the summer growing season. It is obvious from this information that in total there is not an abundance of water in the valley available for irrigation. It should also be noted that spring and stream flow monitoring conducted during the mid and late 1980s as part of a previous coal mining application indicated similar flows from all of these

sources at that time. Additionally, there was no baseflow component of streamflow leaving the valley through Sink Valley Wash, which was noted to be an ephemeral wash by Schmidt in 1980. Additionally, Goode (1964) reported no flow in Sink Valley Wash in the summer of 1963. It is apparent from this information that during previous decades the hydrologic regime in Sink Valley was apparently not substantively dissimilar to that of recent years, although the effects of climatic variability certainly influence the amount of water available in any year.

There can be no question that if adequate water were available to support a thriving farming operation, such an operation would now exist. However, there is a fundamental difference between there being a theoretical capability to irrigate a small parcel of land using any and all efforts required, and the practical realities of actually being able to operate a viable farming operation and to produce an agricultural product from the lands that is economically viable. For the Division to suggest that the current landowners simply choose not to irrigate their lands is an inaccurate statement and appears to reflect a misunderstanding by the Division of conditions in the valley.

Correction of Technical Analysis Statements

- **Cover Page:** The Technical Analysis cover page is dated March 26, 2009.

The date of the TA should be corrected to reflect the date that it was sent to the Proponent. ACD did not receive this document until April 22, 2009.

- **Page 6, third paragraph:** The Division states “postmining land use for the land is stated as agriculture use, grazing for livestock production, recreation, hunting and wildlife habitat.”

The Division should correct the TA and revise this statement. The post mining land use has been determined through agreements with the private landowners. The landowners have signed management plans provided in Appendix 4-3 and 4-4 that state the post mining land use as livestock grazing and wildlife habitat only. The TA needs to be consistent with these agreements and cannot add new uses.

- **Page 6, sixth paragraph:** The Division states “seven of these eligible sites will be adversely impacted by the proposed action”.

The Division should correct the TA and revise this statement. There are actually eight sites that will be impacted and have been mitigated through this process.

- **Page 10, second paragraph:** The Division states “within this time frame, supportive comments were received.... from 6 regional residents”.

The Division should correct this statement. ACD has reviewed the public comments and there were 11 comments from regional residents (as defined by the Division) in support of

the project which were received prior to May 16th, in addition to the supportive comments from the local government leadership.

- **Page 10, third paragraph:** The Division states “negative comments were received from...16 Panguitch business and homeowners”.

The Division should clarify this statement by replacing “and” with “or” since 8 of the comments referred to are business owners and the other 7 are homeowners/residents of Garfield County. Also, “16” should be replaced with “15”.

- **Page 28, second paragraph:** The Division states “the land includes irrigated pasture for cattle and some horses”

*This statement should be corrected in the TA. This contradicts the information provided to the Division in the MRP. On page 4-7 of the MRP this land is described as “mostly **unirrigated** pasture but does support some native stands of pinyon juniper and sagebrush communities”. Mr. Dame does water a lawn nearby the ranch house and there is some spillover from his ponds but based on personal communications with Mr. Dame, irrigation has not occurred in recent years.*

- **Page 29, second paragraph:** The Division states “The report (Schmidt) describes a very active agricultural community in Sink Valley”

This statement should be deleted from the TA. The Schmidt report does not describe a “very active” agricultural community in Sink Valley. This report provides only vague information related specifically to agriculture activity in Sink Valley and the statements which are provided appear to describe agriculture activity similar to current conditions. The following are the main references to Sink Valley in the Schmidt report:

- 1) “Springs are an important source of irrigation water in Johnson Canyon and to a **much lesser extent** in Sink Valley”
- 2) “For example, in Water Canyon, tributary to lower Robinson Creek, spring waters in Upper Cretaceous strata are divided into an irrigation canal which transports the water over two miles to pasture land in Sink Valley”. Refer to Roger M. and C. Burton Pugh statements in Exhibit 1 for details related to this irrigation since this report provides no detail (acres, production, crop types, etc..) about this activity.
- 3) “Goode (1964) reports no flow below Sink Valley in Sink Valley Wash”
- 4) “For example, Sink Valley Wash below Sink Valley has ephemeral streamflow and no diversions”
- 5) “Numerous filed spring sources used for irrigation. Sink Valley Wash has perennial flow only in the vicinity of the springs in Sink Valley. Most of the 11 springs or spring areas that were visited in the main part of Sink Valley yield about 2 to 4 gpm and two yield about 15 to 20 gpm. The total flow of the springs in Sink Valley is probably only 60 to 80 gpm but they support appreciable bog land... (Goode 1964)”. This condition is similar to the current

conditions in Sink Valley and documents well the limited water source in the valley. Their estimate states approximately 60 to 80 gpm total for all the springs in the valley which are split water rights across three different owners. Detailed data from the 1980's through today documents similar total flow of water from the springs, which makes irrigation from these springs extremely limited and in most cases infeasible. This water limitation is specifically why irrigation in the valley has mainly been limited to pasture flooding, confined to small areas, rather than crop production.

- 6) "Designated on basis of flood irrigation in upper basin and potential for relocating diversions, lithology of basin, and possible role as water supply for Kanab irrigation Diversion during spring runoff period." This statement is a high level statement that neither quantifies the irrigation nor describes the actual agriculture in Sink Valley but is reasonable based on the reconnaissance level of study that was conducted by Schmidt. That is why he includes this area for its **potential** only. To put this report into perspective, Schmidt spent 14 days in the field conducting a study covering nearly 2,000 square miles. That is why it contains generalized statements such as this which should not be used out of context or outside the parameters of the report.

There is nothing contained in these or any other statements in the Schmidt report which would constitute a significant change in agriculture activity from the 1980's to today. The agriculture activities in Sink Valley are significantly limited by water availability.

- **Page 29, third paragraph:** The Division states "In 1983, OSM mapped the Sink Valley alluvial Valley floor (AVF) and stressed the importance of agriculture and land use in making the Sink Valley AVF determination, in the absence of more typical geology associated with an alluvial valley" and "OSM stated that the initial reconnaissance conducted of the Alton Area by Jack Schmidt in 1980 was sufficient to confirm the existence of an alluvial valley floor based upon the importance of the valley land to agriculture (pg. D-4) but suggested that an Applicant for a mine permit might collect additional data to clarify the regional hydrologic pattern (page D-2)."

The Division appears to be referring to a statement from Page D-4, Appendix D of the 1983 OSM document. The statement reads:

"Valleys have been developed because of favorable soils and proximity to water. Agriculture in the region could not exist in its present form without the valleys; therefore, alluvial valleys do exist in the region"

This is a statement from the "Regional Setting" subsection of the OSM report that is presented even before the beginning of the discussion of the identification process. This broad statement is clearly being applied to the entire "region" described in the report, which extends from near Bryce Canyon National Park to the Arizona state line and encompasses nearly 2,000 square miles.

No one would dispute that alluvial valley floors exist in this large region. However, the Division then goes on to conclude that:

“OSM stated that the initial reconnaissance conducted of the Alton area by Jack Schmidt in 1980 was sufficient to confirm the existence of an alluvial valley floor based on the importance of the valley land to agriculture (pg. D-4) but suggested that an applicant for a mine permit might collect additional data to clarify the regional hydrologic pattern (page D-2)”.

This statement is completely unfounded and does not even approach what is stated in the complete text of the Schmidt report or the OSM summary in Appendix D of the 1983 document. As stated previously, there appears to be some confusion on the part of Division about the requirements for “confirming” the existence of an alluvial valley floor – namely that both geological and agricultural water use criteria be met.

Mr. Schmidt notes on page D-6 that geologic criteria were indeed used as evaluation criteria in his 1980 alluvial valley floor reconnaissance investigation. Mr. Schmidt indicates that, in his opinion, all of the valleys in the nearly 2,000 square mile study area, both developed and undeveloped, met the requisite geologic criteria. Thus, in accordance with the stated primary purposes of a reconnaissance investigation – namely to identify those areas that clearly are not alluvial valley floors – the application of geologic criteria to his evaluation of the valleys would not further refine his preliminary reconnaissance delineation of alluvial valley floors in the region. Quoting page D-6 (emphasis added):

“The geologic criteria of an alluvial valley floor was not a sufficient basis on which to make determinations, because all valleys, both developed and undeveloped, met those criteria.”

It is entirely incorrect to infer that Mr. Schmidt or OSM deemed it appropriate to confirm the presence of alluvial valley floors based on agricultural water use criteria alone in the absence of the geologic criteria.

Given the nearly 2,000 square mile size of the study area in the Schmidt report and the 14-day field investigation, it was perhaps a reasonable starting assumption for a reconnaissance-level regional study to assume that all stream valleys met the SMCRA geologic requirements. To adequately investigate the near-surface sediments in an area of that size would involve enormous expenditures of time and resources and such was beyond the scope of his investigation. Generally, it is for this reason that reconnaissance-level alluvial valley floor studies are typically performed with readily available or existing data only (see Chapter II of the 1980 OSM guidelines document). However, numerous detailed investigations of the geologic, hydrogeologic, and geomorphologic conditions in the Sink Valley area have been performed since the publication of the 1980 Schmidt report. The results of these investigations clearly indicate that the geologic conditions as described in the Utah State R645 rules and the OSM statutory definitions, are not present in the Sink Valley area.

Further, as Mr. Schmidt notes on page 43 of the complete 1980 report:

“Reconnaissance identification procedures are intended to distinguish between those areas clearly not alluvial valley floors and those areas where detailed study might show that areas would be formally designated as alluvial valley floors. Reconnaissance identification is thus intended to highlight those areas where detailed study is necessary” (emphasis added).

In the legend for Figure D-3, it is noted that the areas marked on the map are “reconnaissance alluvial valley floor determinations” and that “areas generalized and not intended for use in mine permit application studies”.

Again, because of the enormity of the task of evaluating hundreds to thousands of square miles of terrain, some broad generalizations were incorporated by Mr. Schmidt in delineating preliminary alluvial valley floor identification areas. Among these (in addition to the assumption that all valleys met the geologic criteria) are the following (see pages 47-50 of the 1980 Schmidt report):

- “Where subirrigation is known, or where basin characteristics are similar to known subirrigation areas, preliminary determinations of alluvial valley floor status have been made.”*
- “Alluvial valley floors were identified in all valleys with existing stream diversion irrigation, and in all valleys whose basin lithology included the Claron or Kaiparowits Formation.”*
- “Uncertainty exists regarding designations in losing stream reaches where there are no diversions. For example, Sink Valley Wash below Sink Valley has ephemeral streamflow and diversions. Kanab Creek has no diversions from Lamb diversion to that of the Kanab Irrigation Company, a distance of 24 miles... For the purposes of preliminary determination, each of these valleys has been designated an alluvial valley floor.”*

Clearly, the results of this type of high-level survey of an area were never intended to serve as an OSM confirmation of the presence of an alluvial valley floor. It should be noted that at the reconnaissance level investigation stage, such somewhat arbitrary assumptions may have been reasonable given the stated objectives of the study. However, the extrapolation of detailed, site-specific information from such an investigation, particularly when the further detailed study recommended by Mr. Schmidt has now been performed and is available, is entirely inappropriate.

For a fundamental definition of AVF refer to Exhibit 4.

- **Page 32, third paragraph:** The Division states “Neither the federal nor R645 Rules use the term “continuous channel” to define an alluvial valley floor.”

The Utah Administrative Code R645-302-321.300 states that the division will make a positive alluvial valley floor finding if “Unconsolidated streamlaid deposits holding streams are present; and (321.310) ...” the other specified criteria are present in the valley as outlined. In other words, the geologic criterion (the presence of unconsolidated streamlaid sediments in a valley holding streams) is a prerequisite for a positive AVF determination. R645-302-321 goes on to indicate that upland areas...composed chiefly of debris from sheet erosion, deposits formed by unconcentrated runoff...or other mass movement accumulations are specifically excluded from the alluvial valley floor definition in the rules. As defined in R645-100, the term upland areas means “those geomorphic features located outside the floodplain and terrace complex, such as isolated higher terraces, alluvial fans...” This clearly indicates that upland valleys composed of alluvial fans cannot be alluvial valley floors, and further, that upland areas outside the flood plain and terrace complex (such as the Sink Valley area which does not contain a flood plain and terrace complex) cannot be an alluvial valley floor according the Utah State R645 rules.

This statement should be removed from the TA because a continuous channel is an obvious necessity for streamlaid deposits to “hold a stream” as set by the Utah Administrative Code.

For a clarification of geologic regulatory criteria for an AVF determination refer to Exhibit 5.

- **Page 36, first sentence:** The Division uses supreme to premium dairy quality alfalfa hay to estimate the monetary value of cattle grazing on the Pugh and Dame lands.

The Division should revise their method for determining the monetary value of grazing on the Pugh and Dame lands in the TA. On pages 35 and 36 of the TA, the Division describes the procedure they used to determine the monetary value for the cattle grazing activities occurring within the permit area. The Division utilizes a method that equates the annual vegetative productivity for lands in the project area with an equivalent weight of “supreme to premium dairy quality alfalfa.” This method seems questionable given that 1) alfalfa is not produced anywhere within the proposed Coal Hollow Mine permit area, and the potential for alfalfa production in the permit area is questionable (additionally, it is not readily determinable whether the cattle consume all of the annual vegetative productivity), and 2) more reliable and widely accepted methods could have been used to calculate the value of the cattle grazing activities. Specifically, a more reliable estimate for the value of the cattle grazing could probably have been prepared by determining typical local grazing rates (Animal Unit Month rates) for similar public and private lands in the surrounding areas and then multiplying that number by the number of cattle supported on the land. Such a determination would be based on current market conditions in the region, and not on a somewhat speculative relationship between vegetative production and alfalfa hay prices. It is suspected that a calculation using

local AUM grazing rates would likely produce an appreciably lower monetary value than that provided by the Division in the TA.

- **Page 36, second paragraph:** The Division states “there may have been 750 (cattle) in Pugh’s herd at one time.”

This statement should be deleted from the TA. Affidavits are provided in Exhibit 1 by C. Burton Pugh and Roger M. Pugh that the maximum number of cattle their land can support is 50. The Pugh herd has generally been 35 head of cattle (personal communication with the Pugh’s) and the Division states on page 101 of the TA in reference to a tour of Robinson creek (Pugh land) that “excessive soil compaction and almost a complete lack of understory (other than non-native cow forage like crested wheat-grass) indicate a heavily overgrazed pasture.” If 35 cattle can produce this type of damage, 750 cattle is definitely not a reasonable estimate for cattle on the Pugh property.

- **Page 36, fifth paragraph:** The Division states “The Pugh lands were formerly quite productive: 700 bushels/acre of potatoes were raised with irrigation on the Pugh property in 1917 and in the 1950’s oats and wheat crops were produced.

*This statement should be clarified in the TA. This can be misleading since the Pugh property as it relates to this application is several hundred acres and the potato production occurred on only one acre for one year in 1917. It should also be clarified that the oats and wheat crops were **dry** farmed with limited success. Refer to affidavits provided in Exhibit 1.*

- **Page 36, last paragraph:** The Division uses supreme to premium dairy quality alfalfa hay to estimate the value of hay production at the Sorenson Ranch.

The Division should revise their method of calculation for the monetary value of hay production on the Sorenson Ranch. The hay production at the Sorenson Ranch, is mainly “grass” hay and the monetary value calculation should reflect this specific type of hay production. This change should result in a significantly different monetary value.

- **Page 37, sixth paragraph:** The Division states that “The Dame property is subirrigated and apparently needs no supplemental irrigation.”

The Division should delete this statement from the TA. This statement appears speculative and contradicts other statements made by the Division concerning historical irrigation at the Dame property. Why would the landowners attempt irrigation of 93 acres as stated on page 47 of the TA if the land “needs no supplemental irrigation”?

- **Page 37, last paragraph:** The Division states “in Section 728.334, that there has been no irrigation in the last ten years.”

The Division incorrectly states that there was a recent substantial decline in agricultural activity in Sink Valley. The Division has misinterpreted the statements on page 13 of Appendix 7-7 to suggest that ACD's research would confirm a recent decline in agricultural activity in the valley. This is absolutely not the case. Based on discussions with several landowners who were present in the valley during these recent decades, ACD has found no evidence to support the Division's interpretation. To the contrary, landowners to whom ACD has spoken consistently state that, while year to year agricultural success is largely dependent on precipitation patterns, agricultural operations in the valley are not substantively different now than they were in recent decades. This is supported by the statement of the Division that water availability during the 1980s was not substantively different than it is currently. The statements in this regard by the Division are incorrect and should be removed from the TA. Refer to Exhibit 1 which documents some of the discussions with private land owners.

- **Page 38, first paragraph: The Division states** “the Division concludes that the decline in irrigation in the SW ¼ Sec 20 and the SE ¼ SE ¼ Sec 19 has less to do with water availability and more to do with landowner's disinclination.”

This conclusion is unsupported conjecture and should be deleted from the TA. There is a fundamental difference between there being a theoretical capability to irrigate a small parcel of land using any and all efforts required, and the practical realities of actually being able to operate a farming operation that is economically viable. For the Division to suggest that the current landowners simply choose not to irrigate their lands is an unsupported statement and appears to reflect a misunderstanding by the Division of conditions in the valley. Refer to affidavits in Exhibit 1 which includes statements by the landowners in reference to this statement made by the Division. Also, refer to Exhibit 7 which shows the actual water available compared to the water rights allocation.

- **Page 39** The Division states “West of the permit area, lands are irrigated with water taken from Kanab Creek and lower Robinson Creek (Plate 5, Appendix 7-7, Water Rights App. 7-3).”

The Division states that lands west of the permit area are irrigated with water taken from Kanab Creek and Lower Robinson Creek. This is an incorrect statement. There are no identified water rights for surface irrigation diversions from Lower Robinson Creek west of the permit area (see Appendix 7-3). As noted on page 31 of Appendix 7-7, Irrigation of the lands west of the permit area adjacent to Kanab Creek is performed exclusively using surface water diverted from Kanab Creek.

This incorrect statement should be corrected or removed from the TA.

- **Pages 40 through 41 – Water Rights:** The Division's assessment of water rights suggests that water is available in quantities which are magnitudes higher in volume than those documented in the baseline monitoring data.

The Division's assessment of water rights seems to suggest that some very large flows are physically occurring at several springs in the permit and adjacent area. The spring flows described in the water rights discussion range from about 3 to 449 gpm. These flow values are apparently derived from values listed on the water right information sheets on file at the Division of Water Rights (see Appendix 7-3 for printouts of these sheets). These "paper" water rights are not supported by the monitoring data which reflect significantly less availability of water. It should be readily apparent to the Division from the baseline monitoring data submitted to the Division and observations made during visits to the project site that the very large spring flows (including five greater than 100 gpm) included in the "paper water" rights do not actually exist. A table summarizing the spring flows listed on the water rights sheets ("paper water" rights) and the actual discharge measurements performed during baseline monitoring at the project area from 2005 to 2008 is presented in Exhibit 7. These data are also plotted on the figure in Exhibit 7. It is apparent that of the approximately 1,313 gpm combined spring flow listed on the spring water rights, the average combined discharge from these springs during 2005-2008 was only about 45.1 gpm, for a water availability of about 3.4 percent.

The apparent discrepancies between the listed water right flow amounts and the actual measured amounts are likely due to discrepancies between actual historic flow rates for these springs, and the flow rates claimed by the applicants in the diligence water right claim applications submitted to the Division of Water Rights. The flows reported on the water rights files for most of the springs in the area were made in association with diligence claims that were filed at a time when the State Engineer did not require the statements to be verified. The applicants filing the diligence claims were required to characterize the historic beneficial uses of the spring waters occurring before 1903. These diligence claims have not yet been compiled by the State Engineer in a proposed determination for the Virgin River drainage. It is likely that the spring flows reported by the applicants at the time of the diligence filing were based on their best estimates and recollections, but it is unlikely that actual historic flow measurement data for these springs were available at the time of the filing. (A similar situation may have occurred with the declaration of the number of animals using a spring for stock watering). Based on the hydrogeologic conditions in the valley and the current measurements of spring discharge rates, it is unlikely that the large flow rates listed for some of these springs (>400 gpm) actually occurred historically.

The Division's discussion of water rights fails to clarify this situation and implies that such large flows are actually occurring, when baseline monitoring information presented in the MRP clearly indicates that this is not the case. These statements should be clarified or removed from the TA.

It is likewise incorrect to use this information to conclude that "The information provided indicates a substantial area of subirrigated meadow and potentially irrigated pastureland east of the Tropic Shale Ridge". This statement should also be removed from the TA.

- **Page 42, sixth paragraph:** The Division states "Water quality data indicate that there may be enough water to flood irrigate" and "that the quality of water from shallow alluvial groundwater is sufficient to raise alfalfa or other grasses for hay crops..".

The first statement should be clarified in the TA. Water quantity data indicates that flood irrigation can only occur in very limited acreages (generally 5 acres or less per property). This blanket statement which appears to be referring to all the land in Sink Valley can be misleading without clarification of the irrigation limitations as they actually exist. For the second statement, the Division should also provide clarification. The water "quality" of the alluvial water is sufficient for crop production but the "quantity" of water is insufficient to make crop production feasible.

- **Page 44, fifth paragraph:** The Division states "Neither has an assessment of water quality or quantity been determined for the Kanab Creek probable AVF (in accordance with R645-302-322.100 and R645-302-322.200)."

*An assessment of water quality or quantity for the Kanab Creek probable AVF has not been provided because only those areas that have been determined an AVF within the **permit or adjacent area** require these assessments (R645-302-322.100 and R645-302-322.200). This statement should be removed from the TA.*

- **Page 46, third paragraph:** The Division states "Many of the springs, which receive their supply through the alluvial system are likely to be impacted, because the supply will be severed."

This statement should be clarified in the TA. The Division states on page 46 of the TA that many of the springs, which receive their supply through the alluvial system are likely to be impacted, because the supply will be severed. This comment seems to imply that the mining activities will physically cut off the supply of alluvial groundwater from up-gradient source areas. While the discharge locations for a few seeps along the eastern edge of the mine area may be intercepted by the easternmost edges of the mine workings, the source of the alluvial water for these springs is clearly located to the east. No mining operations are being proposed in the up-gradient areas to the east of these spring areas. Consequently, the "severing" of the springs from their water supply will not occur.

- **Page 65, sixth paragraph:** The Division states "Flooding of pit mines by heavy precipitation is a known occurrence and a real possibility at the Coal Hollow Mine, as the applicant states in Section 728.333: "The Division then quotes a sentence out of the MRP that doesn't seem to support this statement."

These statements should be deleted from the TA. On page 65 and 66 of the TA, the Division states that flooding of pit mines by heavy precipitation is a known occurrence and a real possibility at the Coal Hollow Mine. The Division then seems to misinterpret a statement from Section 728.333 of the MRP, implying that the Applicant believes that major torrential precipitation events could flood the mine pits. The statement in 728.333 is specifically referring to the principal surface-water drainages, including lower Sink Valley Wash below the County Road 136 crossing, Lower Robinson Creek, and Kanab Creek and their ability to carry large surface flows. Large stream flows can and do occur in these streams in response to torrential thunderstorm events. However, the statement in the MRP was not describing the much smaller drainage basins that exist within the mine permit and nearby areas (that could potentially convey water to the mine pits). As described in Chapter 7 of the MRP, a full watershed analysis of the mine area watersheds has been performed. The mining and reclamation plan is designed to fully contain surface runoff occurring from the 100-year, 24-hour precipitation event with an additional capacity for a margin of safety. The potential for the actual flooding of the mine pits with storm runoff water is considered very unlikely.

- **Page 82, fourth paragraph:** The Division states “As explained to the Governor’s office in 2005, the initial decision for a 2 shift work day was made to avoid night sky issues that were raised in the Cecil Andrus 1980 Suitability decision”

As set forth in the attached Exhibit 3 (Night Sky Legal Analysis), night sky issues relate to federal lands and federal agency decisions which are not raised by ACD’s application to mine on private lands. This statement is irrelevant to the analysis and should be removed from the TA.

- **Page 86, first paragraph:** The Division states “The Applicant is required to obtain an Air Quality Approval Order prior to receiving a permit to mine.”

There is no regulatory basis for this requirement. The Division should remove this condition from the TA. R645-301-422 states that “the application will contain a description of coordination and compliance efforts which have been undertaken by the applicant with the Utah Bureau of Air Quality.” This information has been provided to the Division and future “coordination and compliance” with UDAQ will be included in subsequent submittals.

- **Page 131, third paragraph:** States “The Division can not allow a period of two years to pass between final coal recovery in the proposed permit area and initiation of reclamation.”

The Division should delete this statement. The Division has authority to approve a temporary cessation of operations until permitting is complete on the federal coal reserves. Once the permitting is complete for the federal reserves, operations would then resume.

- **Page 109, third paragraph:** The Division states that “The Applicant did not include that information in the submittal. The Division **does regulate truck traffic on public roads** including those through Alton. The Applicant did not indicate that any new roads will be constructed in this application, with the exception of the road alignment.”

The Division should clarify this statement. An explanation was provided in the application which stated Alton Coal is still pursuing construction of a road around the town of Alton but all reasonable routes are on privately owned land and that an agreement with the landowners has not been obtained at this time. Also, the Division should correct the unsupported statement that it regulates truck traffic on public roads.

- **Page 142, first paragraph:** States “The Division also has responsibility to the citizens of Kane County, in that the reconstruction of the County road should be completed in a timely fashion.

The Division should delete this statement. There have been two public comment periods and a public hearing for the reroute of this public road. There were no comments provided by citizens of Kane County to validate this claim. The Division does not have authority over this road system nor do they have the responsibility for timely reconstruction of this road since it is not of concern to the citizens of the County.

Exhibit 1

Landowner Statements

AFFIDAVIT OF C. BURTON PUGH

STATE OF UTAH)
COUNTY OF Utah) ss:

C. BURTON PUGH, being first duly sworn, deposes and states as follows:

1. I am competent and over 18 years of age and have personal knowledge of the matters set forth herein.

2. My current address is: 533 North 650 East, Lindon, Utah 84042-1567.

3. Sink Valley Ranch, LLC, is the owner of interests in the following parcels of land located in Kane County, Utah:

Parcels: 9-5-19-1, 9-5-20-2, 9-5-29-3 and 9-5-30-2

4. To the best of my knowledge:

(a) Flood irrigation techniques have not been utilized at the Sink Valley Ranch since the 1990's.

(b) Prior to 1990, limited flood irrigation did occur in a grass meadow located on the east side of the property. This irrigation was by an open ditch and had annual intermittent flow based on precipitation levels. During years with high precipitation, the water could irrigate up to 5 acres of this meadow. During these wet years, the water would cease to be available by mid June to July. The source of this water was from springs in Water Canyon. This flood irrigation of the meadow did not exceed 5 acres.

(c) During dry years, there is no water for irrigation and in some cases water has to be transported into the area to provide livestock watering.

(d) Sink Valley Ranch has not utilized flood irrigation techniques since the 1990's because the limited availability of water verses the cost to implement irrigation makes this type of development infeasible.

(e) Historically, there has been some dry farming of oats and barley which took place before the 1940's with limited success. There was also an area fenced to grow a vegetable garden that was irrigated by catching the water in a small pond and then every four or five days there would be enough of a head, to water the vegetable patch. During the first World War, the Mormon church offered a prize of \$1,000.00 to the person who would raise the most potato's on one acre. My Grandfather entered and the water was used to irrigate the one acre. The prize was won by harvesting 825 bushels of potatoes.

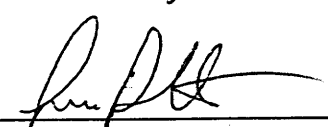
(f) The maximum number of cattle supported by this property at one time is 50.

5. I am authorized to act on behalf of Sink Valley Ranch, LLC, concerning the above listed parcels.

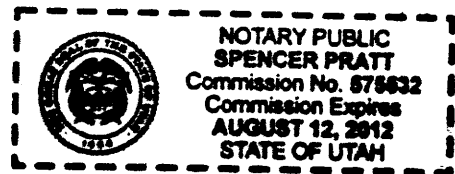
DATED this 13 day of May, 2009.


C. BURTON PUGH

SUBSCRIBED AND SWORN TO this 13 day of May, 2009.



Notary Public



AFFIDAVIT OF ROGER M. PUGH

STATE OF UTAH)
COUNTY OF Kane) ss:

ROGER M. PUGH, being first duly sworn, deposes and states as follows:

1. I am competent and over 18 years of age and have personal knowledge of the matters set forth herein.

2. I am the owner of interests in the following parcels of land located in Kane County, Utah:

Parcels: 9-5-19-1, 9-5-20-2, 9-5-29-3 and 9-5-30-2, containing 733.68 acres, more or less ("Sink Valley Ranch")

3. To the best of my knowledge:

(a) Flood irrigation techniques have not been utilized at the Sink Valley Ranch since the 1990's.

(b) Prior to 1990, limited flood irrigation did occur in a grass meadow located on the east side of the property. This irrigation was by an open ditch and had annual intermittent flow based on precipitation levels. During years with high precipitation, the water could irrigate up to 5 acres of this meadow. During these wet years, the water would cease to be available by mid June to July. The source of this water was from springs in Water Canyon. This flood irrigation of the meadow did not exceed 5 acres.

(c) An attempt was made to produce crops on a four acre parcel located on the east side of the property in the 1980's. The pond located on the east side of the property was improved with a new headgate for irrigation and the pipeline from the forest boundary to the pond was improved. The pond was also cleaned out for maximum capacity. This attempt at irrigation for crops failed due to a lack of water availability.

(d) During dry years, there is no water for irrigation and in some cases water has to be transported into the area to provide livestock watering.

(e) Sink Valley Ranch has not utilized flood irrigation techniques since the 1990's because the limited availability of water verses the cost to implement irrigation makes this type of development infeasible.

(f) Historically, there has been some dry farming of oats and barley which took place before the 1940's with limited success. There was also an area fenced to grow a vegetable garden that was irrigated by catching the water in a small pond and then every four or five days there would be enough of a head, to water the vegetable patch. During the first World War, the Mormon church offered a prize of \$1,000.00 to the person who would raise the most

potato's on one acre. My Grandfather entered and the water was used to irrigate the one acre.
The prize was won by harvesting 825 bushels of potatoes.

50. (g) The maximum number of cattle supported by this property at one time is

DATED this 20 day of May, 2009.

Roger M. Pugh
ROGER M. PUGH

SUBSCRIBED AND SWORN TO this 20th day of May, 2009.

Marjorie Heyborne
Notary Public

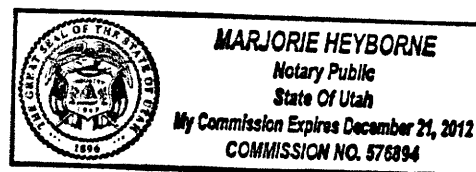


Exhibit 2

Sage-Grouse Mitigation Legal Analysis

Snell & Wilmer

LLP

OFFICE MEMORANDUM

TO: Alton Coal Development, LLC

FROM: Denise A. Dragoo, Esq., Lane Molen, Esq.

DATE: May 18, 2009

RE: *Sage Grouse Habitat Assessment and Mitigation Plan, Coal Hollow Mine Permit Application Package, C/025/0005*

At the request of Alton Coal Development, LLC ("Alton"), we have reviewed the findings of the Utah Division of Oil, Gas and Mining ("DOGM") regarding Alton's Sage Grouse Habitat Assessment and Mitigation Plan ("Findings"). These Findings are set forth in DOGM's April 20, 2009 Technical Review of Alton's Coal Hollow Mine Permit Application Package, C/025/0005 ("PAP"). The Coal Hollow Mine is located entirely on private lands and within private coal reserves. The Greater Sage Grouse ("Sage Grouse") is characterized as a "species of concern" under State law and as a "candidate species" under consideration for listing pursuant to the federal Endangered Species Act, 16 U.S.C. § 1531, et seq. ("ESA"). However, these designations do not authorize DOGM to impose wildlife mitigation requirements which restrict private property rights or exceed federal requirements for ESA candidate species. The Findings attempt to impose requirements which are not authorized under the Utah Coal Program, the ESA or the State Wildlife Code.

I. LIMITATIONS ON THE DIVISION'S AUTHORITY TO REQUIRE SAGE GROUSE HABITAT ASSESSMENT AND MITIGATION

The Sage Grouse has been designated as a "species of concern" by the Utah Division of Wildlife Resources ("DWR") and is a candidate for ESA listing. However, this designation does not authorize the DOGM to impose the onerous restrictions on mine development proposed in the Findings.

Utah Administrative Code § 657-48-9(2), prohibits the use of the "species of concern" designation to restrict private property rights:

Wildlife species of concern designations, wildlife habitat designations or management recommendations may not be used by governmental entities as a basis to involuntarily restrict the private property right of landowners and their lessees of record.

Id., (emphasis added.) Under Utah law, as a general principle, where there is any ambiguity regarding a provision, such ambiguities are to be construed in favor of private property use. *Patterson v. Utah County Bd of Adjustment*, 893 P.2d 602, 606 (Utah Ap. 1995).

DOGM's wildlife protection and enhancement requirements are further limited by "practicability" under the Utah Coal Mining and Reclamation Act, which provides:

To the extent possible, using the best technology currently available, minimize disturbances and adverse impacts of the operator on fish, wildlife and related environmental values, and achieve enhancement of these resources where practicable. . .

Utah Code Ann. § 40-10-17 (emphasis added).

Finally, DOGM is limited by Utah Code Ann. § 40-10-6.5(2) which provides that no rule which the Board adopts ". . . may be more stringent than the corresponding federal regulations which address the same circumstances." Under federal law, consideration of the Sage Grouse as an ESA candidate species does not result in the application of substantive or procedural provisions of the ESA. 50 C.F.R. § 424.15 ("[N]one of the substantive or procedural provisions of the Act apply to a species that is described as a candidate for listing."); *see also Center for Biological Diversity v. Norton*, 254 F.3d 833, 835 (9th Cir. 2001).

II. DOGM'S FINDINGS REGARDING ALTON'S SAGE GROUSE PROTECTION AND ENHANCEMENT PLAN EXCEED ITS AUTHORITY AND MUST BE REMOVED AS A CONDITION TO THE PERMIT

Alton's PAP includes a Sage Grouse Habitat Assessment and Mitigation Enhancement Plan as Appendix 3-1, an appendix regarding Sage Grouse Distribution Habitat Improvement, Alton, Utah, at Appendix 3-3 and an Alton Sage Grouse Habitat Mitigation Plan at Appendix 3-5. In the opinion of Alton's wildlife consultant, these appendices provide a practicable plan for minimizing the adverse impacts of mining to the Sage Grouse and its habitat, consistent with the Utah Coal Program. DOGM is without authority to impose additional restrictions which are not "practicable" under Utah Code Ann. § 40-10-17 and which will "involuntarily restrict" private property rights of Alton and its coal lessees contrary to R657-48-9(2).

Specifically, DOGM is without authority to impose the following restrictions proposed in its Findings:

- A Sage Grouse predator control plan, Technical Analysis ("TA"), p. 100 (exceeds DOGM authority under R645-301-333 to minimize, "to the extent possible" disturbances and impacts to important fish and wildlife species "where practicable" and R657-48-9(2) by involuntarily restricting private property rights).
- The operator's commitment not to disturb the lek during the breeding season, including some buffer, TA, p. 101 (exceeds DOGM authority under R645-301-322, 333, 342, 358, which is limited by practicability and violates R657-48-9(2), by restricting private property rights by disrupting or stopping entirely operations during the breeding season).
- Limitation on the right of entry of surface owners, TA, p. 100 (exceed DOGM authority under R645-301-322, 333, 342, 358, which is limited by practicability and violates R657-48-9(2) by restricting private property rights of Alton's lessees).

- The following requested amendments to the Alton Sage Grouse Habitat Mitigation Plan (Finding at TA, p. 102) exceed DOGM authority under R645-301-322, 333, 342, 358 as to practicability and violate R657-48-9(2) by restricting private property rights:
 1. Development of an alfalfa field for brood rearing habitat, despite lack of available water supply; and
 2. Requirement to provide a corridor between Heut's Ranch and Alton Sink Valley Sage Grouse populations to promote gene transfer and increase population.

We recommend that Alton request that DOGM remove these and other excessive requirements under the PAP for addressing Sage Grouse management and habitat.

Please let me know if you have further questions.

Exhibit 3

Night Sky
Legal Analysis

Snell & Wilmer

L.L.P.

OFFICE MEMORANDUM

TO: Alton Coal Development, LLC

FROM: Denise A. Dragoo, Esq., Jim Allen, Esq.

DATE: May 18, 2009

RE: *April 20, 2009 Technical Review: Night Sky, Coal Hollow Mine Permit Application Package, C/025/0005 ("PAP")*

At the request of Alton Coal Development, LLC ("Alton"), we have reviewed the findings of the Utah Division of Oil, Gas and Mining ("Division") regarding the "night sky" as set forth in their April 20, 2009 Technical Analysis ("TA"). The Division found Alton's plan for Mining Operations and Facilities to be inadequate and required the application to describe the effect of lighting for 24 hour operation on the night sky as seen from the Bryce Canyon National Park and the Dixie National Forest. TA at 83. We have concluded that none of the provisions cited by the TA provide authority for this requirement. The Division references the federal land program regulations which are not applicable to the PAP. The Coal Hollow Mine PAP is located exclusively on private lands within private coal reserves. The TA indicates that the night sky issue was raised by the Dixie National Forest. However, the comments submitted by the Dixie National Forest were initially provided to the Bureau of Land Management ("BLM") regarding Alton's pending federal lease application. These federal coal leases have not been issued and are not included in the pending application. Alton should request the Division to remove this item from the deficiency list.

ANALYSIS

I. THE TA INCORRECTLY APPLIES THE FEDERAL LANDS PROGRAM TO A PAP LOCATED ON PRIVATE LANDS

As noted by the Division, the night sky issue was raised in comments submitted by the Dixie National Forest which were originally prepared in response to Alton's pending federal coal lease application. The PAP relates only to private lands and private coal leases and does not include the pending federal lease application. The night sky issue is being analyzed by the BLM in conjunction with the draft environmental impact statement ("EIS") for the federal coal lease application. Section 102(2)(C) of the National Environmental Policy Act, 42 U.S.C. § 4321, et seq. ("NEPA") requires an environmental analysis by federal agencies undertaking "major Federal action significantly affecting the quality of the human environment" (emphasis added). 42 U.S.C. § 4332. NEPA is not applicable to issuance of a State mine permit on private lands and, as set forth below, the Division has failed to provide any authority for requiring the night sky analysis under the Utah Coal Program.

Similarly, the TA cites comments on the night sky set forth in the December 16, 1980 federal unsuitability decision which are related to impacts regarding undesigned federal lands. TA at 83; App. 1-3, Ex. 1. The TA alludes to the previous unsuitability-by-petition proceeding before the Secretary of the Interior in 1980, and quotes from the Secretary's Order that the unsuitability designation was not "the only basis for protection of the values for which [the Park] was established." Neither the Secretary's Order nor the TA identifies what these other bases might be. The Order clearly states that such future decisions would apply only to proposals to mine on federal land. It should also not be read to provide an independent basis for requiring effects analysis on night sky, but only to mention that other substantive law besides the federal unsuitability process might be applicable to future decisions.

Finally, the Division incorrectly attempts to apply federal program regulations at 30 C.F.R. Part 780 to a PAP on private lands. 30 C.F.R. § 700.5 defines the Federal Lands Program as a program implemented by the Secretary on federal lands under Section 523 of the federal Surface Mining Control and Reclamation Act ("SMCRA"). By contrast, the Utah Coal Program and regulations apply to a PAP located on private lands. Utah Code Ann. § 40-10-9.

II. THE TA FAILS TO CITE ANY AUTHORITY WHICH REQUIRES ALTON TO ADDRESS THE NIGHT SKY ISSUE

As set forth below, the March 26, 2009 TA provides five regulatory citations, none of which provide authority for the deficiency:

1. **30 C.F.R. § 784.2.** This regulation for the permanent federal program applies to underground operations—the correct reference for surface mining is 30 C.F.R. § 780.2, which is identical. Section 784.2 sets forth the objectives of the permanent federal program to "ensure that the regulatory authority is provided with comprehensive and reliable information on proposed surface mining activities, and to ensure that those activities are allowed to be conducted only in accordance with [applicable laws]." The federal program is not applicable because the PAP is located on private lands, not on federal lands. Even assuming that this regulation applies when neither federal lands nor federal coal is involved, the rule is still inapplicable. The rule sets forth no independent standards, but only requires providing information to assure compliance with other substantive law. In sum, this rule is inapplicable on its face to private lands, and inapplicable in the absence of a substantive provision requiring an effects analysis for night sky.

2. **30 C.F.R. § 784.11.** Again, the correct reference applicable to surface mining is 30 C.F.R. § 780.11. This rule sets forth the general descriptive requirements for a plan of operations under the Federal Lands Program and is not applicable to private lands. Even if this rule were applicable to non-federal coal on non-federal land, the Division confuses the applicant's requirement to describe the operations (which is required) with that of describing the effects of the operations (which is not required). In any event, the rule states that the descriptive burden applies to "the mining operations proposed to be conducted during the life of the mine *within the proposed permit area*." The rule cannot be stretched to apply to *effects of* mining operations observed outside the permit area. In sum, this authority is inapplicable on its face to private lands, and even if applicable would not require the information sought by the Division related to night-sky effects outside the permit area.

3. **R645-301-231.** This rule appears in the "Soils" section of the Utah Coal Program, and sets forth "General Requirements" that each application will include four categories of information relating to removal and replacement of topsoil. This rule is inapplicable on its face to effects on the night sky.

4. **R645-301-526.** This rule requires a description of "construction, modification, use, maintenance and removal" of four categories of facilities: Existing structures, utility installation and support facilities, water pollution and control facilities and air pollution control facilities. Again, this rule is primarily concerned with describing the operations. The utilities section requires (1) commitment to operation of support facilities in accordance with the permit, (2) providing sufficient design information to show that the support/utility facilities will comply with the permit's performance standards, (3) locating, maintaining and using support and utilities to prevent erosion, water pollution, and damage to public or private property, and (4) locating, maintaining, and using support facilities to minimize (to the extent possible using best available technology) damage to "fish, wildlife, and related environmental values."

The rule only applies to support and utility facilities, not the actual mining operations themselves, and requires minimizing effects, not eliminating them. Neither "support facilities" nor "utilities" is defined in the state coal rules. The night sky is not a fish-or-wildlife-related environmental value, so the rule is inapplicable. Notably, the 1980 Secretarial decision rejected claims of unsuitability based on adverse effects on wildlife in Bryce Canyon and Dixie National Forest. PAP, App. I-3, Ex I.

5. **R645-301-528.** These rules relate to handling and disposal of waste, spoil, etc., and are inapplicable to night skies. The requirements are descriptive as to facilities and methods, and set forth performance standards or design criteria related to stability of the mass. No effects analysis on any environmental resources is required.

In short, none of the regulations cited in the technical analysis explicitly require analyzing the effects of mining operations on the night sky in adjacent national park or forest land. Alton should request the Division to remove this item from the deficiency list.

Exhibit 4

Fundamental AVF Definition

By

Erik Petersen, P.G.

Fundamental AVF Definition

While honest differences of opinion regarding some specific aspects of the AVF determination process are not unexpected, the fundamental definition of an alluvial valley floor, whether as defined in the Utah 645-302 Rules, or as outlined in the AVF identification guidelines provided by U. S. Office of Surface Mining (1983), is **NOT** ambiguous.

The Utah coal mining rules clearly state that **both** of the two fundamental characteristics of alluvial valley floors (geologic characteristics and agricultural water characteristics) must be present in order for the Division to make a positive determination of an alluvial valley floor. Rule R645-302-321 indicates (emphasis added):

321.300

Based on the investigations conducted under R645-302-321.200, the Division will make a determination of the extent of any alluvial valley floors within the study area and whether any stream in the study area may be excluded from further consideration as lying within an alluvial valley floor.

The Division will determine that an alluvial valley floor exists if it finds that:

321.310. *Unconsolidated streamlaid deposits holding streams* are present; **and**,

321.320. *There is sufficient water to support agricultural activities* as evidenced by...

- 321.321. The existence of flood irrigation in the area in question or its historical use;
- 321.322. The capability of an area to be flood irrigated, based on streamflow water yield, soils, water quality, and topography; or,
- 321.323. Subirrigation of the lands in question, derived from the groundwater system of the valley floor.

This definition clearly indicates that both the geologic and agricultural water use characteristics of a stream valley must be present in order for the Division to make a positive alluvial valley floor finding. There is no provision in the regulations to justify the arbitrary exclusion of the first requirement (321.310; geologic characteristics) under the R645-302 rules.

Any thoughtful reader of these regulations would of necessity conclude that a region not meeting the specified geologic criteria cannot be designated as an alluvial valley floor, regardless of the presence or absence of the agricultural water use criteria also outlined.

This same concept is explicitly laid out in the 1983 U.S. Department of the Interior, Office of Surface Mining Reclamation and Enforcement (OSM), Alluvial Valley Floor Identification and Study Guidelines.

The OSM guidelines reference the Flannery decision (1980) which sheds light on several aspects of the alluvial valley floor regulatory program. The court sustained the OSM interpretation that alluvial valley floors may be found along perennial, intermittent, or ephemeral stream. The court noted:

“An alluvial valley floor must satisfy geologic criteria (unconsolidated stream-laid deposits meeting the regulation’s dimensions) and hydrologic criteria (water sufficient to sustain agriculture).”

Additionally, using unambiguous language, the OSM guidelines reference the statutory definition of an alluvial valley floor as expanded and clarified through regulations, judicial review, and administrative decisions. The geologic criteria defined in the statutory definition are as follows:

The geologic criteria of an alluvial valley floor are considered to be:

- (a) A topographic valley with a continuous perennial, intermittent, or ephemeral stream channel running through it; and
- (b) Within that valley, those surface landforms that are either flood plains or terraces if these landforms are underlain by unconsolidated deposits; and
- (c) Within that valley, those side-slope areas that can reasonably shown to be underlain by alluvium and which are adjacent to flood plain or terrace landform areas.

(Note the “and” language in the above presented geologic criteria definitions)

The OSM further notes that an alluvial valley floor is determined to exist only when the both of the following two criteria are met: 1. Geologic Criteria, and 2) Water Availability Criteria (see page II-11 in 1983 OSM document).

This definition clearly states that specific geologic criteria must be met, in addition to the agricultural water use criteria, in order for a region to be determined to be an alluvial valley floor (see pages II-7 to II-11 in the 1983 OSM guidelines).

It is difficult to imagine more straightforward language than that in the Utah R645 rules and the OSM AVF identification guidelines regarding the required presence of both geologic and agricultural water use criteria for a positive AVF determination to be made. It is becoming increasingly difficult to understand why there apparently remains confusion with Division personnel regarding these most fundamental aspects of the alluvial valley floor identification process.

Exhibit 5

Clarification of Geologic Criteria for AVF Determination

By

Erik Petersen, P.G.

Clarification of Geologic Regulatory Criteria for AVF Determination

The Utah Rule R645-302-321.300 indicates that the division will make a positive alluvial valley floor finding if "Unconsolidated streamlaid deposits holding streams are present; and (321.310) ..." the other specified criteria are present in the valley as outlined. In other words, the geologic criterion (the presence of unconsolidated streamlaid sediments in a valley holding streams) is a prerequisite for a positive AVF determination. R645-302-321 goes on to indicate that upland areas...composed chiefly of debris from sheet erosion, deposits formed by unconcentrated runoff...or other mass movement accumulations are specifically excluded from the alluvial valley floor definition in the rules. As defined in R645-100, the term upland areas means "those geomorphic features located outside the floodplain and terrace complex, such as isolated higher terraces, alluvial fans..." This clearly indicates that upland valleys composed of alluvial fans cannot be alluvial valley floors, and further, that upland areas outside the flood plain and terrace complex (such as the Sink Valley area which does not contain a flood plain and terrace complex) cannot be an alluvial valley floor according the Utah State R645 rules.

The 1983 OSM guidelines note that "Although 'alluvial valley floor' has a technical meaning, particularly to a geologist, in the context of the Surface Mining Control and Reclamation Act (SMCRA), the term has a regulatory meaning. Failure to understand that 'alluvial valley floor' is a regulatory term, defined in statute and clarified in legislative, court decisions, regulations, and ongoing administrative decisions, can result in incomplete or misdirected studies." (See OSM pages II-4-5).

The 1983 OSM alluvial valley floor identification guidelines present the expanded and clarified statutory definition of an alluvial valley floor. This statutory definition is based on regulations, judicial review, and administrative decisions. The statutory geologic criteria that must be present for an area to be an alluvial valley floor are listed on pages II-7 and II-8 of the 1983 OSM guidelines document. The geologic criteria are as follows:

"A. Geology. As already noted, one of the two fundamental aspects of an alluvial valley floor is its geologic character. Regulations, judicial review, and administrative decisions have expanded and clarified the statutory definition. The geologic criteria of an alluvial valley floor are understood to be [emphasis added]:

"(a) A topographic valley with a continuous perennial, intermittent, or ephemeral stream channel running through it; and;

"(b) within that valley, those surface landforms that are either flood plains or terraces if these landforms are underlain by unconsolidated deposits; and

"(c) within that valley, those side-slope areas that can reasonably be shown to be underlain by alluvium and which are adjacent to flood plain or terrace areas."

It is clearly evident from these definitions (both the Utah R645 rules and the OSM guidelines) that if there is no flood plain and terrace complex in a topographic valley,

there likewise is no alluvial valley floor in that valley, regardless of the presence or lack of the required agricultural water use characteristics of that valley (i.e., the geologic criteria must be met for the valley to qualify as an alluvial valley floor).

Given these considerations, and the Division's acknowledgement that there is no flood plain and terrace complex in Sink Valley (see March 30, 2009 Technical Memo, Page 10), a negative determination regarding the presence of AVF seems straightforward.

In this TA and in previous correspondences with the Division, considerable emphasis has been placed on information presented in the 1980 Jack Schmidt Earth Resources Consulting report prepared for the U.S. Office of Surface Mining (OSM) entitled *Reconnaissance Determination of alluvial Valley Floor Status and Assessment of Sediment Yield in Selected Areas of the Alton Petition Area and Adjoining Lands Garfield and Kane Counties, Utah*. Information from this report was also summarized in an appendix to the 1983 OSM document *Alluvial Valley Floor Identification and Study Guidelines*. A discussion of these documents is presented here to clarify the information contained as it relates to the current status of the alluvial valley floor determination in the Coal Hollow Project area.

In Mr. Schmidt's cover letter to Mr. Paul Bodenberger of the Office of Surface Mining, he clearly indicates that his study is a reconnaissance determination of alluvial valley floor status. The introduction to the report indicates that Mr. Schmidt spent a total of 14 days conducting necessary field work and collecting information from local federal agency offices, and that the nature of Schmidt's work should be considered reconnaissance. The project area (the Alton petition and adjacent areas) as shown on Figure D-3 in the 1983 OSM document encompasses more than 1,000 square miles. Mr. Schmidt was commissioned not only to conduct a regional reconnaissance AVF investigation, but also to make an evaluation of the nature of agricultural use of water, make an evaluation of the erosion and sediment yield characteristics in proposed mining areas, and make an evaluation of the effect of erosion and sediment yield on downstream channels and associated stream diversions. Under these conditions, clearly Mr. Schmidt could not possibly be expected to perform all of these tasks and to perform a field investigation of the geologic and agricultural water use conditions in Sink Valley in anything approaching the kind of detail required to make a formal AVF determination. Consequently, the report is appropriately presented as a reconnaissance determination.

As indicated on page II-12 of the 1983 OSM guidelines, "The purpose of an initial identification phase is to permit identification of areas which clearly are not alluvial valley floors, so that detailed studies can be focused only on areas which might reasonably be expected to be alluvial valleys. The other purpose of initial studies is to permit a level of identification on the basis of readily available or easily collected data." Appendix D of the 1983 OSM alluvial valley floor identification and study guidelines is an appendix that uses the findings of a 1980 reconnaissance alluvial valley floor study of the Alton unsuitability petition area as an example to illustrate the procedure for performing initial alluvial valley floor identification studies in coal mining areas.

On page 29 of the Divisions Technical Analysis document (26 March 2009), the Division appears to be referring to a statement from Page D-4, Appendix D of the 1983 OSM document. The statement reads:

“Valleys have been developed because of favorable soils and proximity to water. Agriculture in the region could not exist in its present form without the valleys; therefore, alluvial valleys do exist in the region”

This is a statement from the “Regional Setting” subsection of the OSM report that is presented even before the beginning of the discussion of the identification process. This broad statement is clearly being applied to the entire “region” described in the report, which extends from near Bryce Canyon National Park to the Arizona state line and encompasses nearly 2,000 square miles.

No one would dispute that alluvial valley floors exist in this large region. However, the Division then goes on to conclude that:

“OSM stated that the initial reconnaissance conducted of the Alton area by Jack Schmidt in 1980 was sufficient to confirm the existence of an alluvial valley floor based on the importance of the valley land to agriculture (pg. D-4) but suggested that an applicant for a mine permit might collect additional data to clarify the regional hydrologic pattern (page D-2)”.

This statement is completely unfounded and does not even approach what is stated in the complete text of the Schmidt report or the OSM summary in Appendix D of the 1983 document. As stated previously, there appears to be some confusion on the part of Division personnel about the requirements for “confirming” the existence of an alluvial valley floor – namely that both geological and agricultural water use criteria be met.

Mr. Schmidt notes on page D-6 that geologic criteria were indeed used as evaluation criteria in his 1980 alluvial valley floor reconnaissance investigation. Mr. Schmidt indicates that, in his opinion, all of the valleys in the nearly 2,000 square mile study area, both developed and undeveloped, met the requisite geologic criteria. Thus, in accordance with the stated primary purposes of a reconnaissance investigation – namely to identify those areas that clearly are not alluvial valley floors – the application of geologic criteria to his evaluation of the valleys would not further refine his preliminary reconnaissance delineation of alluvial valley floors in the region. Quoting page D-6 (emphasis added):

“The geologic criteria of an alluvial valley floor was not a sufficient basis on which to make determinations, because all valleys, both developed and undeveloped, met those criteria.”

It is entirely incorrect to infer that Mr. Schmidt or OSM deemed it appropriate to confirm the presence of alluvial valley floors based on agricultural water use criteria alone in the absence of the geologic criteria.

Given the nearly 2,000 square mile size of the study area in the Schmidt report and the 14-day field investigation, it was perhaps a reasonable starting assumption for a reconnaissance-level regional study to assume that all stream valleys met the SMCRA geologic requirements. To adequately investigate the near-surface sediments in an area of that size would involve enormous expenditures of time and resources and such was beyond the scope of his investigation. Generally, it is for this reason that reconnaissance-level alluvial valley floor studies are typically performed with readily available or existing data only (see Chapter II of the 1980 OSM guidelines document). However, numerous detailed investigations of the geologic, hydrogeologic, and geomorphologic conditions in the Sink Valley area have been performed since the publication of the 1980 Schmidt report. The results of these investigations clearly indicate that the geologic conditions as described in the Utah State R645 rules and the OSM statutory definitions, are not present in the Sink Valley area.

Further, as Mr. Schmidt notes on page 43 of the complete 1980 report:

“Reconnaissance identification procedures are intended to distinguish between those areas clearly not alluvial valley floors and those areas where detailed study might show that areas would be formally designated as alluvial valley floors. Reconnaissance identification is thus intended to highlight those areas where detailed study is necessary” (emphasis added).

In the legend for Figure D-3, it is noted that the areas marked on the map are “reconnaissance alluvial valley floor determinations” and that “areas generalized and not intended for use in mine permit application studies”.

Again, because of the enormity of the task of evaluating hundreds to thousands of square miles of terrain, some broad generalizations were incorporated by Mr. Schmidt in delineating preliminary alluvial valley floor identification areas. Among these (in addition to the assumption that all valleys met the geologic criteria) are the following (see pages 47-50 of the 1980 Schmidt report):

- “Where subirrigation is known, or where basin characteristics are similar to known subirrigation areas, preliminary determinations of alluvial valley floor status have been made.
- “Alluvial valley floors were identified in all valleys with existing stream diversion irrigation, and in all valleys whose basin lithology included the Claron or Kaiparowits Formation.
- “Uncertainty exists regarding designations in losing stream reaches where there are no diversions. For example, Sink Valley Wash below Sink Valley has ephemeral streamflow and diversions. Kanab Creek has no diversions from Lamb diversion to that of the Kanab Irrigation Company, a distance of 24 miles... For the purposes of preliminary determination, each of these valleys has been designated an alluvial valley floor.”

Clearly, the results of this type of high-level survey of an area were never intended to serve as an OSM confirmation of the presence of an alluvial valley floor. It should be noted that at the reconnaissance level investigation stage, such somewhat arbitrary assumptions may have been reasonable given the stated objectives of the study. However, the extrapolation of detailed, site-specific information from such an investigation, particularly when the further detailed study recommended by Mr. Schmidt has now been performed and is available, is entirely inappropriate.

Exhibit 6

Selenium Sampling Graph

By

Erik Petersen, P.G.

Water soluble selenium concentrations in overburden and underburden samples from the 200-acre proposed Coal Hollow Mine pit areas

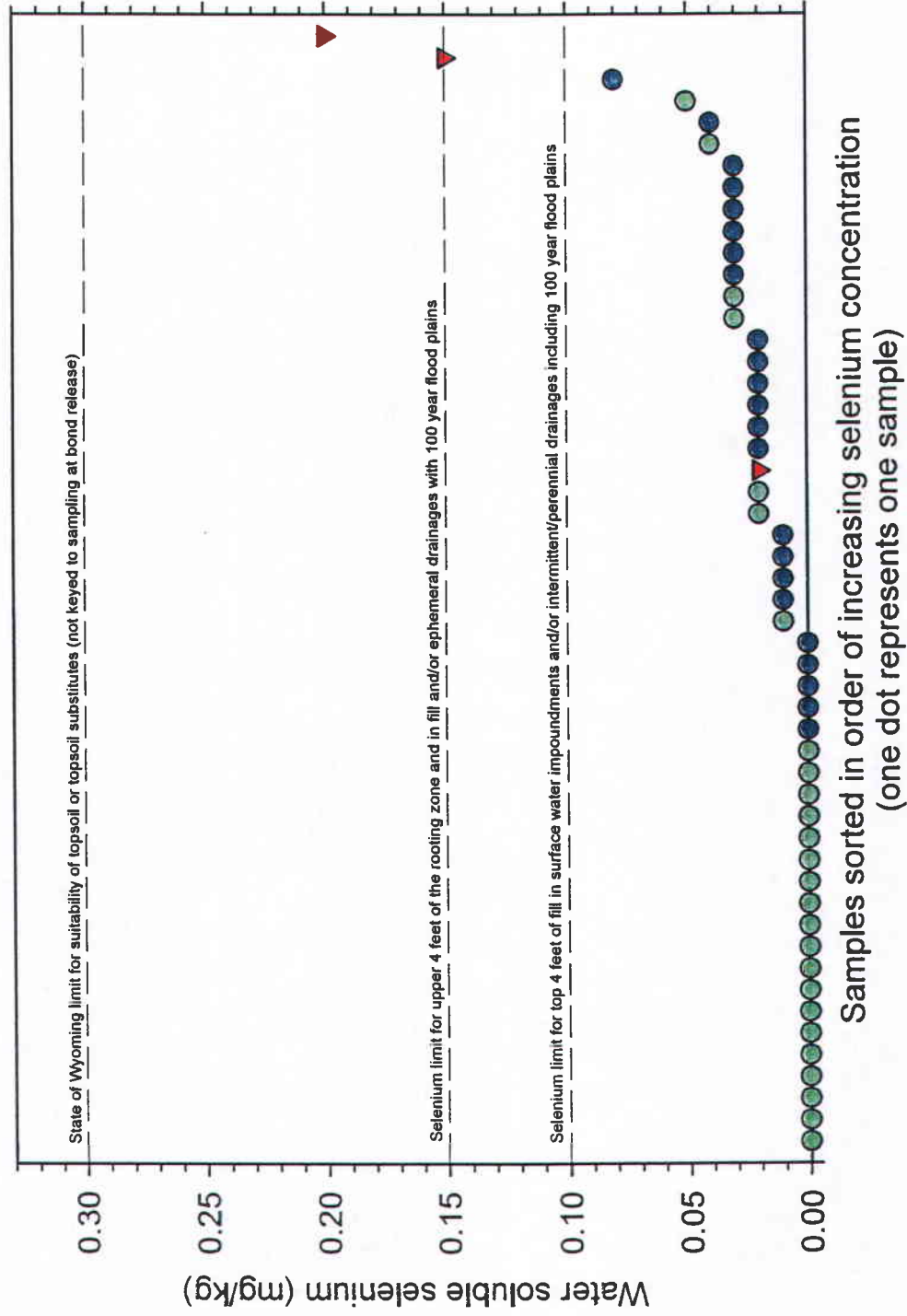


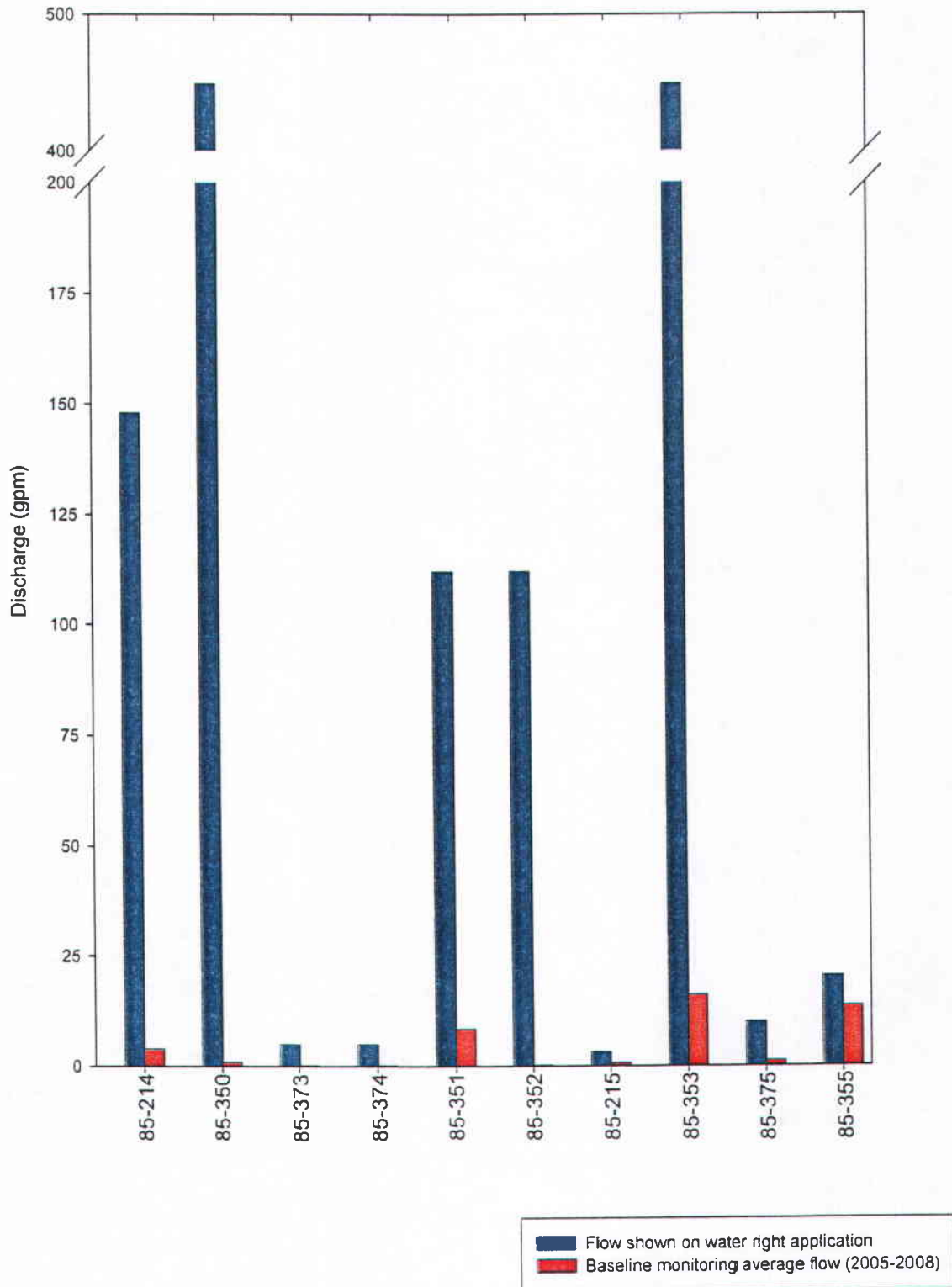
Exhibit 7

Water Rights Compared to Measured Water Availability

By

Erik Petersen, P.G.

Comparison of average measured spring flows with
spring flows claimed in the water rights application



Water right availability for springs in the Coal Hollow Project area.

MRP Appendix 7-3 REF number	WR #	Coal Hollow baseline Site	Owner	Source	USE	Water rights flow listing Stated Amount in gpm	Measured average (2005-2008) in gpm	Percent of water right available
SP-1	85-214	SP-14	C. Burton Pugh	Tater Patch Spring	Irrigation, stockwatering	148	3.9	3%
SP-2	85-350	SP-16	Richard L. & Alecia S. Dame	Swapp Ranch Spring Area #1	Irrigation, stockwatering	449	0.9	0%
SP-3	85-373	SP-40 (Sorensen Spr)	Darilynn & Arlene Sorensen	Sorensen Ranch Spring #1	Stockwatering, domestic	4.9	0.2	4%
SP-4	85-374	SP-19	Darilynn & Arlene Sorensen	Sorensen Ranch Spring #2	Stockwatering	4.9	0.2	4%
SP-5	85-351	SP-20	Richard L. & Alecia S. Dame	Swapp Ranch Spring Area #2	Irrigation, stockwatering	112	8.4	8%
SP-6	85-352	SP-22	Richard L. & Alecia S. Dame	Swapp Ranch Spring Area #3	Irrigation, stockwatering	112	0.2	0%
SP-7	85-215	SP-23	C. Burton Pugh	Spring House Spring	Irrigation, stockwatering	3.1	0.7	23%
SP-8	85-353	SP-8	Richard L. & Alecia S. Dame	Swapp Ranch Spring Area #4	Stockwatering	449	16	4%
SP-9	85-375	SP-6	Darilynn & Arlene Sorensen	Sorensen Ranch Spring #3	Stockwatering	9.9	1.1	11%
SP-10A	85-355	SP-33	James, Julie & Lloyd Johnson	Pulsifer Spring	Irrigation, stockwatering	31.725 ac/ft/yr (19.7 gpm)	13.5	67%
SP-10B	85-1011	SP-33	James, Julie & Lloyd Johnson	Pulsifer Spring	Domestic	0.9 ac/ft/yr (0.6 gpm)	---	---
Combined total of springs						1,313	45.1	3.43%

Exhibit 8

Wyoming Topsoil Suitability Guidelines

Table I-2: Criteria to establish suitability of topsoil (or topsoil substitutes).

Parameter	Suitable	Marginal 1/	Unsuitable
pH	5.5-8.5	5.0-5.5 8.5-9.0	<5.0 >9.0
EC (Conductivity) mmhos/cm	0-8	8-12	>12
Saturation Percentage	25-80	<25 >80	
Texture		c,sic,s	
SAR 2/	0-10	10-12 3/ 10-15	>12 3/ >15
Selenium	<0.3 ppm	>0.3-0.8 ppm 4/	5/
Boron	<5.0 ppm		>5.0 ppm
Coarse Frag (% vol)	<25%	25-35	>35%

1/ Evaluated on an individual basis for suitability.

2/ As an alternative to SAR calculations, ESP (exchangeable sodium percentage) can be determined. ESP should be determined if suitable SAR value is exceeded.

3/ For fine textured soils (clay >40%)

4/ These marginally suitable values are keyed to sampling vegetation at bond release. Vegetation >5 ppm Se is considered unsuitable.

5/ No specific limit of extractable selenium concentration is provided because of the lack of data for spoil material > 0.8 ppm.